Annex "A"











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	DRAWN B	Y: BFC CHECKED BY: BFC						
PPINES	DESIGNED	BY: BFC DATE STARTED: JAN 2020						

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
	LINE AND GRADE
	STANDARD USE OF ZONING
	ARCHITECTURAL
_	
	STRUCTURAL
	ELECTRICAL
	SANITARY
	MECHANICAL
	ELECTRONIC
	FIRE PROTECTION
ſ	REVISIONS: SHEET NO.
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A-1.2	SC	ALE										1: 100	MTS

LT	300	CONE	OMIN	IUM	UNIT	18N	FITOUT	RE	NOV	ATION
3 P	R (ΟΡ	0 3	S E	Ð	F	L 0	0	R	Ρ
A-1.2 sc.	ALE									

OO CONDOMINUM UNIT NOVATION PROJECT		OWNER:	SHEET CONTENT:		
PRIVATIZATION AND MANAGEMENT OFFICE PABLO OCAMPO ST., MALATE, MANILA, PHILIPPINES 104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES DESIGNED BY: BFC DATE STARTED: JAN 2020	00 CONDOMINUM UNIT NOVATION PROJECT		AS FOUND FLOOR PLAN DEMOLITION PLAN PROPOSED FLOOR PLAN		
PABLO OCAMPO ST., MALATE, MANILA, PHILIPPINES 104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES DESIGNED BY: BFC DATE STARTED: JAN 2020		PRIVATIZATION AND MANAGEMENT OFFICE	DRAWN BY: BFC CHECKED BY: BFC)	
	PABLO OCAMPO ST., MALATE, MANILA, PHILIPPINES	104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES	DESIGNED BY: BFC DATE STARTED: JAN 202	0	





	OWNER:	SHEET CONTENT:		
DO CONDOMINUM UNIT		CONSTRUCTION PLAN SCHEDULE OF WALL SCHEDULE OF DOOF	N FINISHES RS AND WINDOWS	APF
	PRIVATIZATION AND MANAGEMENT OFFICE	DRAWN BY: BFC	CHECKED BY: BFC	
ABLO OCAMPO ST., MALATE, MANILA, PHILIPPINES	104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES	DESIGNED BY: BFC	DATE STARTED: JAN 2020	

DESCRIPTION
CT FOR SURFACE REPAIR USING NECESSARY PUTTY AND WORKS AND PAINTING USING ODORLESS LATEX PAINT () STANDARDS
THICK FIBER CEMENT BOARD ON BOTH FACES WITH STUD AND TRACKS FRAMING SPACED EVERY 400MM ON EXPOSED FACES SUBJECT FOR NECESSARY PAINTING LL BE PAINTED USING ODORLESS LATEX PAINT AS PER DARDS
BOARD. 300MM X 300MM CERAMIC TILES WITH ROUT AND TILE ADHESIVE. AREA COVERED SHALL BE BOARD UP TO BOTTOM OF OVERHEAD CABINET. OTHER ECT FOR PAINTING USING ODORLESS LATEX PAINT AS STANDARDS
L TILES. EXISTING AND NEW CHB WALLS SUBJECT FOR NTITIOUS WATERPROOFING AS PER MANUFACTURER'S DMM HEIGHT. NEW CHB WALLS SHALL BE 100MM THICK WITH MORTAR AND 10MM DIAMETER DEFORMED REBARS ON CENTER, BOTH WAYS WITH CEMENT PLASTER ON WALLS SUBJECT FOR INSTALLATION OF 300MM X 300MM WALLS SUBJECT FOR INSTALLATION OF 300MM X 300MM WITH ANTI-BACTERIAL TILE GROUT AND TILE ADHESIVE FINISH FLOOR LINE. PROVIDE UPVC SQUARE SECTION RIM ABOVE WALL TILE TERMINATIONS. ABOVE WALL TILE DR ODORLESS LATEX PAINT APPLICATION AS PER DARDS AND IN CONSIDERATION WITH NECESSARY STRUCTION STANDARDS
EXISTING AND NEW CHB WALLS SUBJECT FOR NTITIOUS WATERPROOFING AS PER MANUFACTURER'S DMM HEIGHT. NEW CHB WALLS SHALL BE 100MM THICK WITH MORTAR AND 10MM DIAMETER DEFORMED BAR (600MM ON CENTER, BOTH WAYS WITH CEMENT FACES. WALLS SUBJECT FOR INSTALLATION OF 300MM IC TILES WITH ANTI-BACTERIAL TILE GROUT AND TILE I FLOOR LINE UP TO FINISH CEILING LINE. EXISTING WALL SURFACE SUBJECT FOR SURFACE REPAI
D USING ELASTOMERIC PAINT AS PER MANUFACTURER'S
R FACE. EXISTING WALL TILES SUBJECT FOR OSAL, AND EXPOSED SURFACE SUBJECT FOR ROOFING APPLICATION UP TO 300MM FROM FINISH FLOC URFACE SUBJECT FOR NECESSARY PAINTING CONSTRUCTION STANDARD AND SUBJECT FOR OMERIC PAINT AS PER MANUFACTURER'S STANDARDS

NTS

SCHEDULE OF DOORS AND WINDOWS							
DOORS AND WINDOWS DETAIL DRAWING	-	GENERAL DESCRIF	PTION	HARDWARE			
(SCALE 1 : 50 MTS)	DOOR LABEL	DESCRIPTION	QUANTITY	LOCATION	HINGES	LOCKSETS	ACCESSORIES
B50 Jong PLAN TOP OF DOOR JAMB ELEV.: +2150.00 OSL OSL OSL OSL OSL ELEV.: +2150.00 ELEV.: +2150.00	D O1	EXISTING ENTRANCE DOOR TO BE RETAINED AND REFURBISHED. ALL EXISTING HARDWARE TO BE REPLACED WITH NEW OF APPROVED EQUIVALENT QUALITY. EXISTING DOOR JAMB AND DOOR PANEL SUBJECT FOR PAINTING USING QUICK DRYING ENAMEL AS PER MANUFACTURER'S STANDARDS.	1	ENTRANCE DOOR	PROVIDE 4 SETS STAINLESS STEEL 100MM X 100MM X 2.5MM BALL BEARING HINGES. SUBMIT SAMPLE FOR APPROVAL.	INSTALL HEAVY DUTY STEEL LUXURY GRIP HANDLE ENTRANCE DOOR LOCKSET IN SATIN NICKEL FINISH. SUBMIT SAMPLE FOR APPROVAL.	INSTALL SINGLE CYLINDER DEADBOLT IN SATIN NICKEL FINISH; SATIN NICKEL DOOR VIEWER; STAINLESS STEEL DOOR CHAIN; SATIN NICKEL DOOR STOPPER; AND DOOR SEAL WITH BRUSH. SUBMIT SAMPLES FOR APPROVAL.
TOP OF DOOR JAMB ELEV.: +2150.00 0 FF.L. ELEV.: ±0.00 ELEVATION		50MM THICK 900MM X 2100MM FLUSH DOOR WITH WOOD FRAMING AND 6MM THICK MARINE PLYWOOD FACE WITH 50MM X 100MM KILN DRIED S4S SOLID WOOD DOOR JAMB IN QUICK DRYING ENAMEL PAINTED FINISH WITH NECESSARY PAINTING PREPARATIONS AS PER MANUFACTURER'S STANDARDS.	2	DORMITORY AND EXECUTIVE ROOMS DOOR	PROVIDE 4 SETS STAINLESS STEEL 100MM X 100MM X 2.5MM BALL BEARING HINGES. SUBMIT SAMPLE FOR APPROVAL.	INSTALL ENTRANCE TYPE HEAVY DUTY CYLINDRICAL LEVER HEAVY DUTY LOCKSET IN SATIN NICKEL FINISH, SUBMIT SAMPLE FOR APPROVAL,	INSTALL SATIN NICKEL DOOR STOPPER. SUBMIT SAMPLES FOR APPROVAL.
TOP OF DOOR JAMB ELEV.: +2150.00 001 001 001 001 001 001 ELEV.: ±0.00 ELEV.: ±0.00 ELEV.: ±0.00 ELEV.: ±0.00	D 03	50MM THICK 700MM X 2100MM FLUSH DOOR WITH WOOD FRAMING AND 6MM THICK MARINE PLYWOOD FACE WITH 500MM (H) X 500MM (W) LOUVERS WITH 50MM X 50MM K.D. WOOD FRAMED AND WOOD LOUVERS, WITH 50MM X 100MM KILN DRIED S4S SOLID WOOD DOOR JAMB IN QUICK DRYING ENAMEL PAINTED FINISH WITH NECESSARY PAINTING PREPARATIONS AS PER MANUFACTURER'S STANDARDS.	1	TOILET AND BATH ENTRANCE DOOR	PROVIDE 4 SETS STAINLESS STEEL 100MM X 100MM X 2.5MM BALL BEARING HINGES. SUBMIT SAMPLE FOR APPROVAL.	INSTALL PRIVACY TYPE HEAVY DUTY CYLINDRICAL LEVER HEAVY DUTY LOCKSET IN SATIN NICKEL FINISH. SUBMIT SAMPLE FOR APPROVAL.	INSTALL SATIN NICKEL DOOR STOPPER. SUBMIT SAMPLES FOR APPROVAL.

LT 300 CONDOMINUM UNIT 18N FITOUT RENOVATION PROJECT 3 SCHEDULE OF DOORS AND WINDOWS A-1.3 SCALE 1: 50 MTS

	REVISIONS:	SHEET NO.
PPROVED BY:		A 1.3



	OWNER:	SHEET CONTENT:			
00 CONDOMINUM UNIT NOVATION PROJECT		SCHEDULE OF DOORS AND WINDOWS REFLECTED CEILING PLAN T&B BLOW–UP PLAN AND INTERIOR ELEVATIONS			
	PRIVATIZATION AND MANAGEMENT OFFICE	DRAWN BY: BFC CHECKED BY: BFC			
PABLO OCAMPO ST., MALATE, MANILA, PHILIPPINES	104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES	DESIGNED BY: BFC DATE STARTED: JAN 2020			



	OWNER:	SHEET CONTENT:	
O CONDOMINUM UNIT OVATION PROJECT		T&B BLOW-UP PLAN CROSS AND LONGITU EXEC. RM. DRESSER KITCHEN BLOW-UP	N & INT. ELEVS. JDINAL SECTIONS CABINET DETAILS PLAN AND DETAILS
BLO OCAMPO ST., MALATE, MANILA, PHILIPPINES	104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES	DESIGNED BY: BFC	DATE STARTED: JAN 2020

STANDARDS. PROVIDE 18MM X 18MM PVC SHADOW LINE MOULDING AT CEILING PERIMETER 100MM THICK DRYWALL USING 9MM THICK FIBER CEMENT BOARD WITH METAL STUD AND TRACKS FRAMING IN ELASTOMERIC PAINT FINISH AS PER MANUFACTURER'S STANDARDS

CHB WALL SUBJECT FOR CEMENT PLASTER AND NECCESSARY

PAINTING PREPARATION WORKS AND SUBJECT FOR ODORLESS

300MM X 300MM GLAZED CERAMIC TILES UP 900MM HEIGHT FROM

FINISH FLOOR LINE COMPLETE WITH ANTI-BACTERIAL TILE GROUT AND TILE ADHESIVE, PROVIDE 10MM X 10MM PVC SQUARE

LATEX PAINT AS PER MANUFACTURER'S STANDARDS

SECTION TILE TRIM

PER MANUFACTURER'S STANDARDS COMPLETE WITH METAL FURRING FRAMING AND ACCESSORIES AS PER CONSTRUCTION

9 MM THICK GYPSUM BOARD IN FLAT LATEX PAINTED FINISH AS

1: 30 MTS



600 450

1 24

850 750

A-1.5 SCALE







400

EXEC. ROOM FIN.

ELEV.: +1700.00

EXEC. ROOM

FIN. FLR. LINE

ELEV.: ± 0.00

�<u>'</u>

400

LT 300 CONDOMINUM UNIT 18N FITOUT RENOVATION PROJECT EXECUTIVE ROOM DRESSER CABINET DETAIL ELEV.

ELEV.: +2100.00

KITCHEN

ELEV.: +850.00

KITCHEN FIN. FLR. LINE

ELEV.: ± 0.00

1230



MELAMINE WOOD GRAIN LAMINATE MACHINE PRESSED ON BOTH FACES ON 20MM THICK MARINE PLYWOOD SHELVES WITH 1MM THICK PVC EDGEBAND COMPLETE WITH HARDWARE AND MOUNTING ACCESSORIES 30MM X 15MM STAINLESS STEEL OVAL HANGER ROD WITH SIDE MOUNTED OVAL TUBE HOLDER ON BOTH ENDS

GENERAL NOTES: 1. ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION THE PHILIPPINE ELECTRICAL ELECTRICAL CODE. TO THE RULES AND REGULATIONS OF LOCAL AND NATIONAL AUTHORITIES CONCERNED AND THE REQUIREMENTS OF LOCAL UTILITY COMPANIES. 2. WIRING METHOD SHALL BE AS FOLLOWS:

- a. ALL CONDUIT EMBEDDED IN CONCRETE ALL EXPOSED CONDUIT SHALL BE ELECTRICAL METALLIC CONDUIT (EMT) WITH UP TO 50MM Ø. GREATER THAN 50MM Ø USE INTERMEDIATE METALLIC CONDUIT (IMC).
- 3. MINIMUM SIZE OF WIRE AND CONDUIT SHALL BE 3.5mm THHN AND 20MM $(\frac{3}{4})$ NOMINAL DIAMETER RESPECTIVELY. UNLESS OTHERWISE SPECIFIED IN THE PLANS.
- 4. NO BRANCH CIRCUIT WIRING IN LIGHTING AND POWER SHALL HAVE A LOAD MORE THAN 80% OF ITS RATING.
- LIGHTING CONTROL SWITCHES SHALL BE RATED 16 AMPERES, 230 VAC.
 UNLESS OTHERWISE SPECIFIED PULL BOXES OR JUNCTION BOXES SHALL BE PROVIDED WHENEVER REQUIRED AND NECESSARY, ALTHOUGH SUCH BOXES ARE NOT INDICATED IN THE PLANS.
- 7. FOR EACH SPARE CIRCUIT IN PANELBOARD, PROVIDE AN EMPTY CONDUIT 20MM $\binom{3}{4}$ ") DIAMETER TERMINATING TO A COVERED SQUARE BOX.
- 8. ALL MATERIALS AND EQUIPMENT NOT TO BE USED SHALL BE BRAND NEW AND OF
- APPROVED TYPE FOR BOTH LOCATION AND PURPOSE. 9. ALL METAL FRAMES SHALL BE PROPERLY AND ADEQUATELY GROUNDED. GROUND WIRE SHALL BE PROVIDED AND ALL EQUIPMENT FEEDER.
- 10. MOUNTING HEIGHTS SHALL BE AS FOLLOWS: ----- 1.40M ABOVE FINISH FLOOR LINE a. LIGHT SWITCHES b. RECEPTACLES ----- 0.30M ABOVE FINISH FLOOR LINE c. PANELBOARDS ----- 1.80M ABOVE F.F.L. UP TO CENTER OF BREAKER d. TEL/ LAN/ CATV ----- 0.30M ABOVE FINISH FLOOR LINE
- e. EMERGENCY LIGHT OUTLET ----- 2.20M ABOVE F.F.L.
- * UNLESS OTHERWISE SPECIFIED THE ABOVE CLEARANCES ARE TO BE FOLLOWED. 11. THE JOB SHALL BE EXECUTED IN THE MOST THROUGH PROMPT AND WORKMANSHIP LIKE MANNER, EMPLOYING STANDARD TOOLS, EQUIPMENT, METHODS AND GOOD ENGINEERING PRACTICES. THE JOB SHALL BE DONE COMPLETELY IN ALL ASPECTS AS REQUIRED IN
- THE PLANS AND SPECIFICATIONS AND READY FOR OPERATION. 12. ALL EQUIPMENT WIRE, ROYAL CORDS, SPECIAL TYPE PLUGS AND RECEPTACLES AS
- REQUIRED SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. 13. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE PROPER IDENTIFICATION AND LABELING OF ALL CIRCUIT BREAKERS. EACH PANEL WILL BE PROVIDED WITH A TYPEWRITTEN CIRCUIT DIRECTORY.
- 14. THE DRAWING AND SPECIFICATIONS ARE INTENDED TO PRESENT A GENERAL LAYOUT AND BROAD OUTLINE AND DESCRIPTION OF THE PROJECT AND DOES NOT NECESSARY INDICATE DESCRIBED ACTUAL LOCATION LEVELS AND DISTANCES OF EQUIPMENT. THE CONTRACTOR IS HEREBY REQUIRED TO MAKE ADJUSTMENT AT THE JOBSITE AS LOCATIONS, LEVELS AND DISTANCES ARE GOVERNED BY ACTUAL FIELD CONDITIONS.
- 15. WIRES SHALL BE COLOR CODED AT VOLTAGE 480/230V: GROUND - GREEN PHASE A – BROWN PHASE C – YELLOW PHASE B – ORANGE NEUTRAL – GREY
- 16. NO REVISION IN THE DESIGN SHALL BE DONE WITHOUT PRIOR KNOWLEDGE AND APPROVAL OF THE DESIGNER AND THE OWNER. ANY SUCH REVISION DONE WITHOUT THE APPROVAL SHALL CAUSE THE RESPONSIBILITY OF THE DESIGNER TO CEASE AS A WHOLE. 17. ALL WEATHER EXPOSED INSTALLATION SHALL USE WEATHERPROOF TYPE MATERIALS,
- ESPECIALLY WEATHERPROOF CONVENIENCE OUTLET, CAST-BOXES, JUNCTION BOXES. CONTRACTOR TO SUBMIT SAMPLES FOR APPROVAL. 18. ALL 20 AMPERE CIRCUIT HOMERUN TO PANELBOARD MORE THAN 30 METERS IN LENGTH
- SHALL BE 5.5MM THHN (#10 AWG), UNLESS OTHERWISE SPECIFIED IN THE PLANS.
- THERE SHALL BE ONLY ONE SERVICE DROP TO THE PROPOSED BUILDING, SECONDARY SERVICE ENTRANCE SHALL BE 480 VOLTS, THREE-PHASE, 3 WIRE + GROUND, 60Hz
- 20. ALL BUSBAR SHALL HAVE A HEAT SHRINKABLE TYPE INSULATION, AND BUSBAR SHALL BE FULLY-TIN INSULATED.
- 21. ALL PULLBOXES, PANELBOARD SHALL BE POWDER COATED BEIGE COLOR AND USE SIS CABLE FOR THE CONTROL WIRE OF SWITCHBOARD. 22. ALL ELECTRICAL WORKS SHALL BE DONE UNDER THE DIRECT SUPERVISION OF A DULY
- LICENSED ELECTRICAL ENGINEER AND/OR MASTER ELECTRICIAN.





PANEL DE	SIGNATION: PB									
OVT NO			NO. OF	VOLTO		4145	CKT PROTECTION			SIZ
CKI. NU.	CIRCUIT	DESCRIPTION	UNITS	VULIS	WATTS	AWF	AT	P	AF	
1	1-2.0 hp Inverter ty	ype ACU	1	230	2760	12.00	30	1	50	2-5.5mm2 TH
2	1-1.5 hp Inverter ty	/pe ACU	1	230	2300	10.00	30	1	50	2-5.5mm2 TI
3	1 - 3.5KW Water H	leater	1	230	3500	15.22	30	1	50	2-5.5mm2 TI
4	Refrigerator		1	230	1840	8.00	30	1	50	2-5.5mm2 TI
5	Microwave Oven		1	230	1200	5.22	30	1	50	2-5.5mm2 TH
6	Cooktop		2	230	765	3.33	30	1	50	2-5.5mm2 TI
7	Convenience outle	t at 180 watts per unit	8	230	1440	6.26	20	1	50	2-3
8	Convenience outle	t at 180 watts per unit	7	230	1260	5.48	20	1	50	2-3.
9	Lighting outlets		48	230	1428	6.21	20	1	50	2-3.
10	Spare	Spare		230	1000	0	20	1	50	2-3
	-	TOTAL:	70		17493	71.71	Am p.			
COMPUTA	TION:				1 1	1	USE	:		
TOTAL CURRENT =		71.71	Х	0.80	Demand Fac	tor		2-22.0mm2	, 1-5.5mm2	TWH Cu Wire
	= 57.37		+	0.25	12	i i		In 32mm di	a. EMT pipe	e conduit
	ji ji	60.37	Amps					MAIN: 90 A	T/ 100AF, 18	P, 230 VOLTS, 6



THE SITE UNIT 18N LEGASPI TOWERS 300 2600 ROXAS BLVD. CORNER PABLO OCAMPO ST., MALATE, MANILA, PHILIPPINES \\DEPARTMENT[\] OF FINANCE MANILA YACHT C CLUB #HT/URAI ČENTÉR Q THE LT 300 CONDOMINUM UNIT 18N FITOUT RENOVATION PROJECT

LE(GEND
Φ	2-GANG CONVENIENCE OUTLET
Φwp	2-GANG CONVENIENCE OUTLET (WEATHERPROOF)
Ф _{RH}	2-GANG CONVENIENCE OUTLET (RANGE HOOD)
$-\bigcirc$	SPECIAL PURPOSE OUTLET
T	TELEPHONE OUTLET (EXISTING LINE FOR RELOCATION)
0	LED DOWNLIGHT
	2 X 5W LED EMERGENCY LIGHT
	CEILING MOUNTED EXHAUST FAN
	STAND ALONE SMOKE DETECTOR
OHD	STAND ALONE HEAT DETECTOR
	 □ E (□ P □ P

	E-1 SCALE	NTS						
		THIS DRAWING IS AN INSTRUMENT OF SERVICE AND A PROPERTY OF BENJAMIN F	PROJECT TITLE:	OWNER:	SHEET CONTENT:			
		CAYABYAB, REGISTERED ARCHITECT, & SUCH MUST NOT BE REPRODUCED OR COPIED IN PART OR IN WHOLE WITHOUT HIS PERMISSION.	LEGASPI TOWERS 300 CONDOMINUM UNIT 18N FITOUT RENOVATION PROJECT		VICINITY MAP, RISER DIAGRAM, PANE BOARD DIAGRAM, SCHEDULE OF LOADS, POWER AND AUXILIARY LAYC			
PIR NO.:	DATE :	ALL DRAWINGS ARE TO BE RETURNED WHEN		PRIVATIZATION AND MANAGEMENT OFFICE	DRAWN BY: BFC CHECKED BY: E	3FC		
ISSUED AT :	TIN NO.:	REPUBLIC ACT 9266	LOCATION: 2600 ROXAS BLVD. CORNER PABLO OCAMPO ST., MALATE, MANILA, PHILIPPINES	104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES	DESIGNED BY: BFC DATE STARTED: JAN 2	2020		

- 1. ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION THE PHILIPPINE ELECTRICAL ELECTRICAL CODE. TO THE RULES AND REGULATIONS OF LOCAL AND NATIONAL AUTHORITIES CONCERNED AND THE REQUIREMENTS OF LOCAL UTILITY COMPANIES.
- 2. WIRING METHOD SHALL BE AS FOLLOWS: a. ALL CONDUIT EMBEDDED IN CONCRETE ALL EXPOSED CONDUIT SHALL BE ELECTRICAL METALLIC CONDUIT (EMT) WITH UP TO 50MM Ø. GREATER THAN 50MM Ø USE INTERMEDIATE METALLIC CONDUIT (IMC).
- MINIMUM SIZE OF WIRE AND CONDUIT SHALL BE 3.5mm THEN AND 20MM ($\frac{3}{7}$ ") NOMINAL 3. DIAMETER RESPECTIVELY, UNLESS OTHERWISE SPECIFIED IN THE PLANS.
- NO BRANCH CIRCUIT WIRING IN LIGHTING AND POWER SHALL HAVE A LOAD MORE THAN 4. 80% OF ITS RATING.
- LIGHTING CONTROL SWITCHES SHALL BE RATED 16 AMPERES, 230 VAC. 5
- 6. UNLESS OTHERWISE SPECIFIED PULL BOXES OR JUNCTION BOXES SHALL BE PROVIDED WHENEVER REQUIRED AND NECESSARY, ALTHOUGH SUCH BOXES ARE NOT INDICATED IN THE PLANS.
- 7. FOR EACH SPARE CIRCUIT IN PANELBOARD, PROVIDE AN EMPTY CONDUIT 20MM $\left(\frac{3}{4}\right)^{3}$ DIAMETER TERMINATING TO A COVERED SQUARE BOX.
- ALL MATERIALS AND FOUIPMENT NOT TO BE USED SHALL BE BRAND NEW AND OF 8 APPROVED TYPE FOR BOTH LOCATION AND PURPOSE.
- 9 ALL METAL FRAMES SHALL BE PROPERLY AND ADEQUATELY GROUNDED, GROUND WIRE SHALL BE PROVIDED AND ALL EQUIPMENT FEEDER.
- 10. MOUNTING HEIGHTS SHALL BE AS FOLLOWS:

a. LIGHT SWITCHES	1.40M ABOVE FINISH FLOOR LINE
b. RECEPTACLES	0.30M ABOVE FINISH FLOOR LINE
c. PANELBOARDS	1.80M ABOVE F.F.L. UP TO CENTER
	OF BREAKER
d. TEL/ LAN/ CATV	0.30M ABOVE FINISH FLOOR LINE

- e. EMERGENCY LIGHT OUTLET ----- 2.20M ABOVE F.F.L.
- * UNLESS OTHERWISE SPECIFIED THE ABOVE CLEARANCES ARE TO BE FOLLOWED.
- 11. THE JOB SHALL BE EXECUTED IN THE MOST THROUGH PROMPT AND WORKMANSHIP LIKE MANNER, EMPLOYING STANDARD TOOLS, EQUIPMENT, METHODS AND GOOD ENGINEERING PRACTICES. THE JOB SHALL BE DONE COMPLETELY IN ALL ASPECTS AS REQUIRED IN THE PLANS AND SPECIFICATIONS AND READY FOR OPERATION.
- 12. ALL EQUIPMENT WIRE, ROYAL CORDS, SPECIAL TYPE PLUGS AND RECEPTACLES AS REQUIRED SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- 13. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE PROPER IDENTIFICATION AND LABELING OF ALL CIRCUIT BREAKERS, EACH PANEL WILL BE PROVIDED WITH A TYPEWRITTEN CIRCUIT DIRECTORY.
- 14. THE DRAWING AND SPECIFICATIONS ARE INTENDED TO PRESENT A GENERAL LAYOUT AND BROAD OUTLINE AND DESCRIPTION OF THE PROJECT AND DOES NOT NECESSARY INDICATE DESCRIBED ACTUAL LOCATION LEVELS AND DISTANCES OF EQUIPMENT. THE CONTRACTOR IS HEREBY REQUIRED TO MAKE ADJUSTMENT AT THE JOBSITE AS LOCATIONS, LEVELS AND DISTANCES ARE GOVERNED BY ACTUAL FIELD CONDITIONS.

15. WIRES SHALL BE COLOR CODED AT VOLTAGE 480/230V: PHASE A - BROWN PHASE C - YELLOW GROUND - GREEN PHASE B – ORANGE NEUTRAL – GREY

- 16. NO REVISION IN THE DESIGN SHALL BE DONE WITHOUT PRIOR KNOWLEDGE AND APPROVAL OF THE DESIGNER AND THE OWNER. ANY SUCH REVISION DONE WITHOUT THE APPROVAL SHALL CAUSE THE RESPONSIBILITY OF THE DESIGNER TO CEASE AS A WHOLE.
- 17. ALL WEATHER EXPOSED INSTALLATION SHALL USE WEATHERPROOF TYPE MATERIALS. ESPECIALLY WEATHERPROOF CONVENIENCE OUTLET, CAST-BOXES, JUNCTION BOXES. CONTRACTOR TO SUBMIT SAMPLES FOR APPROVAL.
- 18. ALL 20 AMPERE CIRCUIT HOMERUN TO PANELBOARD MORE THAN 30 METERS IN LENGTH SHALL BE 5.5MM THHN (#10 AWG), UNLESS OTHERWISE SPECIFIED IN THE PLANS.
- 19. THERE SHALL BE ONLY ONE SERVICE DROP TO THE PROPOSED BUILDING, SECONDARY SERVICE ENTRANCE SHALL BE 480 VOLTS, THREE-PHASE, 3 WIRE + GROUND, 60Hz
- 20. ALL BUSBAR SHALL HAVE A HEAT SHRINKABLE TYPE INSULATION. AND BUSBAR SHALL BE FULLY-TIN INSULATED.
- 21. ALL PULLBOXES, PANELBOARD SHALL BE POWDER COATED BEIGE COLOR AND USE SIS CABLE FOR THE CONTROL WIRE OF SWITCHBOARD.
- 22. ALL ELECTRICAL WORKS SHALL BE DONE UNDER THE DIRECT SUPERVISION OF A DULY LICENSED ELECTRICAL ENGINEER AND/OR MASTER ELECTRICIAN.

	CIRCUIT DESCRIPTION	NO. OF	VOLTE	MATTO	AMD	CK	T PROTECT	TION	SIZE OF WIRE	
UNT. NU.	CIRCUIT DESCRIPTION	UNITS	VULIS	WATTS	AUVIE	AT	P	AF	(Cu Wire)	SIZE OF CONDULT
1	1-2.0 hp Inverter type ACU	1	230	2760	12.00	30	1	50	2-5.5mm2 THW, 1-2.00mm2 TWH	15mm dia. EMT Conduit
2	1-1.5 hp Inverter type ACU	1	230	2300	10.00	30	1	50	2-5.5mm2 THW, 1-2.00mm2 TWH	15mm dia. EMT Conduit
3	1 - 3.5KW Water Heater	1	230	3500	15.22	30	1	50	2-5.5mm2 THW, 1-2.00mm2 TWH	15mm dia. EMT Conduit
4	Refrigerator	1	230	1840	8.00	30	1	50	2-5.5mm2 THW, 1-2.00mm2 TWH	15mm dia. EMT Conduit
5	Microwave Oven	1	230	1200	5.22	30	1	1 50 2-5.5mm2 THW, 1-2.00mm2 TWH		15mm dia. EMT Conduit
6	Cooktop	2	230	765	3.33	30	1	1 50 2-5.5mm2 THW, 1-2.00mm2 TWH		15mm dia. EMT Conduit
7	Convenience outlet at 180 watts pe	r unit 8	230	1440	6.26	20	1	50	2-3.5mm2 THW	15mm dia. EMT Conduit
8	Convenience outlet at 180 watts pe	runit 7	230	1260	5.48	20	1	50	2-3.5mm2 THW	15mm dia. EMT Conduit
9	Lighting outlets	48	230	1428	6.21	20	1	50	2-3.5mm2 THW	15mm dia. EMT Conduit
10	Spare	0	230	1000	0	20	1	50	2-3.5mm2 THW	15mm dia. EMT Conduit
	TOTAL:	70		17493	71.71	Am p.		10 1		
				(c)					-bb.	
OMPUTAT	TION:					USE:				
TC	TOTAL CURRENT = 71.71		0.80	Demand Fac	tor		2-22.0mm2	, 1-5.5mm2	TWH Cu Wire	
	= 57.37	÷	0.25	12			In 32mm di	a. EMT pipe	conduit	

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F-1 / SCALE

PROPOSED CONDOMINUM UNIT 18N FITOUT RENOVATION PROJECT

ELECTRICAL RISER DIAGRAM.

60.37

Amps

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MAIN: 90AT/ 100AF, 1P, 230 VOLTS, 60Hz, 10KAIC

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		THIS DRAWING IS AN INSTRUMENT OF SERVICE AND A PROPERTY	PROJECT TITLE :	OWNER :	SHEET CONTENT :			REVISIONS :	SHEET NO.
		OF BENJAMIN F. CAYABYAB, REGISTERED ARCHITECT, & SUCH MUST NOT BE REPRODUCED OR COPIED IN PART OR IN WHOLE WITHOUT HIS PERMISSION.	PROPOSED CONDOMINUM UNIT 18N		ELECTRICAL GENERAL NOTES, LEGEND, ELECTRICAL RISER AND DIAGRAM, VICINITY MAP	PANELBOARD	APPROVED BY:		E
PTR NO. :	DATE :	ALL DRAWINGS ARE TO BE RETURNED WHEN NO LONGER IN USE.	FILOUT RENOVATION PROJECT		DRAWN BY : BFC	CHECKED BY : BFC		()	1
ISSUED AT :	TIN :	REPUBLIC ACT 9266	LOCATION : 2600 ROXAS BOULEVARD CORNER PABLO OCAMPO STREET, MALATE, MANILA, PHILIPPINES	104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES	DESIGNED BY : BENJAMIN F. CAYABYAB	DATE STARTED: JANUARY 2020			

2

F_1 / SCALE

- ALL WORKS SHALL BE IN ACCORDANCE TO THE PROVISIONS 1. OF THE FIRE CODE OF THE PHILIPPINES, NFPA CODES AND THE RULES AND REGULATIONS OF THE ENFORCING AUTHORITY OF THE CONCERNED MUNICIPALITY.
- ALL PIPE SIZES SHOWN ON PLANS ARE NOMINAL 2. SIZES (INSIDE DIAMETER).
- 3. ALL EXISTING PIPES ARE IN INCHES: ALL NEW PIPES ARE IN MILLIMETERS.
- COORDINATE THE DRAWING WITH OTHER RELATED 4 DRAWINGS AND SPECIFICATION.
- ALL PORTABLE FIRE EXTINGUISHER (PFE) SHALL BE FE-36 5. TYPE DRY CHEMICAL UNLESS OTHERWISE SPECIFIED
- ALL NEW BRANCHES AND CROSSMAINS PASSING THRU BEAMS/GIRDERS 6. SHALL BE PROVIDED WITH PIPE SLEEVE.
- ALL PIPES SHALL BE INSTALLED AS INDICATED ON PLANS. ANY RELOCATIONS REQUIRED FOR PROPER EXECUTION OF OTHER TRADE SHALL BE WITH PRIOR THE APPROVAL 7. OF THE ARCHITECT OR ENGINEER. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY FOUND THEREIN.
- MINIMUM DISTANCE OF SPRINKLER HEAD TO LIGHTING FIXTURE 8. SHALL BE 300 MM.
- 9. PENDENT TYPE SPRINKLERS SHALL BE USED FOR AREAS WITH CEILING UPRIGHT TYPE SPRINKLERS SHALL BE USED FOR AREAS WITHOUT CEILING
- 10. THE CONTRACTOR SHALL CHECK/VERIFY AT THE SITE THE EXISTING SPRINKLER HEAD LOCATIONS.
- 11. THE CONTRACTOR SHALL CHECK/VERIFY AT THE SITE THE EXISTING BRANCH AND CROSSMAIN LOCATION AND SIZES.
- PRVIDE 4-WAY SWAY BRACE AT TOP OF NEW EXTENDED RISER. 12.
- FREEZERS / COLD STORAGE SHALL BE PROVIDED BY DRY TYPE 13. SUPPRESSION SYSTEM (BY SPECIALIST).

MATERIAL SPECIFICATIONS

- FIRE LINES FIRE LINES SHALL BE BLACK IRON (B.I.) PIPES SCHEDULE 40 CONFORMING TO ASTM A-120-1980. SHALL BE OUTSIDE SCREW AND YOKE (OS&Y) GATE VALVES
- TO ASTM B-62 CHECK AND GLOBE VALVES TO ASTM B-62.
- ALL SPRINKLER HEADS, PENDENT (CONCEALED, SPRINKLER HEADS UPRIGHT & SIDEWALL) SHALL BE RATED 57°C (135°F) TO 74°C (165°F) EXCEPT ON KITCHÉN SHALL BÈ 79°C (175°F) TO 100°C (212°F).

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DL

DSP

DV

FCV

FHC

FHV

GV

PFE

RN

WFS

- EXISTING BRANCH LINE / CROSSMAIN
- NEW BRANCH LINE NEW CROSSMAIN OR FEEDMAIN LINE
- SIDEWALL SPRINKLER HEAD
- SPRINKLER/AFSS RISER
- DRY STANDPIPE RISER
- DL STACK

-

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- FLUSHING CONNECTION
- RISER NIPPLE
- 2-WAY LONGITUDINAL SWAY BRACE

EXISTING SPRINKLER HEAD UPRIGHT TYPE

ADDED SPRINKLER HEAD UPRIGHT TYPE

ADDED SPRINKLER HEAD PENDENT TYPE

SPRINKLER HEAD TO BE DELETED

RELOCATED SPRINKLER HEAD PENDENT TYPE

- 2-WAY LATERAL SWAY BRACE
- 4-WAY RISER SWAY BRACE
- FIRE HOSE VALVE HANGER
 - FIRE HOSE CABINET
- PIPE SLEEVES
 - (10 LBS.) PORTABLE FIRE EXTINGUISHER
- (50 LBS.) PORTABLE FIRE EXTINGUISHER WHEELED TYPE
 - DRAIN LINE DRAIN VALVE

ABBREVIATION:

- AFSS AUTOMATIC FIRE SPRINKLER SYSTEM CHECK VALVE DRAIN LINF DRY STAND PIPE DRAIN VALVE FLOOR CONTROL VALVE FIRE HOSE CABINET FIRE HOSE VALVE GATE VALVE (OS & Y)GV (OUTSIDE SCREW & YOKE)GATE VALVE PORTABLE FIRE EXTINGUISHER RISER NIPPLE
 - WATER FLOW SWITCH

PROPOSED CONDOMINUM UNIT 18N FITOUT RENOVATION PROJECT Ρ С М Α

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FP-1/

SCALE

NTS

		THIS DRAWING IS AN INSTRUMENT OF SERVICE AND A PROPERTY	PROJECT TITLE :	OWNER :	SHEET CONTENT :			REVISIONS :	SHEET NO.
		OF BENJAMIN F. CAYABYAB, REGISTERED ARCHITECT, & SUCH MUST NOT BE REPRODUCED OR COPIED IN PART OR IN WHOLE WITHOUT HIS PERMISSION.	PROPOSED CONDOMINUM UNIT 18N		FIRE PROTECTION GENERAL NOTE LEGEND, ABBREVIATION, SPRINKLE VICINITY MAP	S, MAT. SPECS., ER HEAD DETAILS	APPROVED BY:		FP
PTR NO. :	DATE :	ALL DRAWINGS ARE TO BE RETURNED WHEN NO LONGER IN USE.	FILOUT RENOVATION PROJECT	DRIVATIZATION AND MANAGEMENT OFFICE	DRAWN BY : BFC	CHECKED BY : BFC			
ISSUED AT :	TIN :	REPUBLIC ACT 9266	LOCATION : 2600 ROXAS BOULEVARD CORNER PABLO OCAMPO STREET, MALATE, MANILA, PHILIPPINES	104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES	DESIGNED BY : BENJAMIN F. CAYABYAB	DATE STARTED: JANUARY 2020			

- 1. ALL WORKS SHALL BE IN ACCORDANCE TO THE PROVISIONS OF THE FIRE CODE OF THE PHILIPPINES, NFPA CODES AND THE RULES AND REGULATIONS OF THE ENFORCING AUTHORITY OF THE CONCERNED MUNICIPALITY.
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.3 ALL EXISTING PIPES ARE IN INCHES; ALL NEW PIPES ARE IN MILLIMETERS.

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- ALL PIPES SHALL BE INSTALLED AS INDICATED ON PLANS. 7. ANY RELOCATIONS REQUIRED FOR PROPER EXECUTION OF OTHER TRADE SHALL BE WITH PRIOR THE APPROVAL OF THE ARCHITECT OR ENGINEER. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY FOUND THEREIN. MINIMUM DISTANCE OF SPRINKLER HEAD TO LIGHTING FIXTURE 8.
- SHALL BE 300 MM. PENDENT TYPE SPRINKLERS SHALL BE USED FOR AREAS WITH CEILING 9.
- UPRIGHT TYPE SPRINKLERS SHALL BE USED FOR AREAS WITHOUT CEILING 10. THE CONTRACTOR SHALL CHECK/VERIFY AT THE SITE
- THE EXISTING SPRINKLER HEAD LOCATIONS.
- 11. THE CONTRACTOR SHALL CHECK/VERIFY AT THE SITE THE EXISTING BRANCH AND CROSSMAIN LOCATION AND SIZES.
- 12. PRVIDE 4-WAY SWAY BRACE AT TOP OF NEW EXTENDED RISER.
- 13. FREEZERS / COLD STORAGE SHALL BE PROVIDED BY DRY TYPE SUPPRESSION SYSTEM (BY SPECIALIST).

MATERIAL SPECIFICATIONS :

FIRE LINES

FIRE LINES SHALL BE BLACK IRON (B.I.) PIPES SCHEDULE 40 CONFORMING TO ASTM A-120-1980.

- SHALL BE OUTSIDE SCREW AND YOKE (OS&Y) GATE VALVES TO ASTM B-62 CHECK AND GLOBE VALVES TO ASTM B-62.
- SPRINKLER HEADS ALL SPRINKLER HEADS, PENDENT (CONCEALED, UPRIGHT & SIDEWALL) SHALL BE RATED 57°C (135°F) TO 74°C (165°F) EXCEPT ON KITCHEN SHALL BE 79°C (175°F) TO 100°C (212°F).

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EXISTING SPRINKLER HEAD PENDENT TYPE EXISTING SPRINKLER HEAD UPRIGHT TYPE RELOCATED SPRINKLER HEAD PENDENT TYPE ADDED SPRINKLER HEAD UPRIGHT TYPE ADDED SPRINKLER HEAD PENDENT TYPE SPRINKLER HEAD TO BE DELETED EXISTING BRANCH LINE / CROSSMAIN NEW BRANCH LINE NEW CROSSMAIN OR FEEDMAIN LINE

SIDEWALL SPRINKLER HEAD SPRINKLER/AFSS RISER DRY STANDPIPE RISER DL STACK

- RISER NIPPLE
- 2-WAY LONGITUDINAL SWAY BRACE 2-WAY LATERAL SWAY BRACE
- 4-WAY RISER SWAY BRACE
- FIRE HOSE VALVE HANGER
- FIRE HOSE CABINET
- PIPE SLEEVES
- (10 LBS.) PORTABLE FIRE EXTINGUISHER (50 LBS.) PORTABLE FIRE EXTINGUISHER WHEELED TYPE

 (\mathbf{A})

 (B)

DRAIN LINE

DRAIN VALVE

ABBREVIATION:

AUTOMATIC FIRE SPRINKLER SYSTEM CHECK VALVE DRAIN LINE DRY STAND PIPE DRAIN VALVE FLOOR CONTROL VALVE FIRE HOSE CABINET FIRE HOSE VALVE GATE VALVE (OUTSIDE SCREW & YOKE)GATE VALVE PORTABLE FIRE EXTINGUISHER RISER NIPPLE WATER FLOW SWITCH

LT 300 CONDOMINUM UNIT 18N FITOUT RENOVATION PROJECT TVICINITY MAP NTS FP-1/ SCALE

		THIS DRAWING IS AN INSTRUMENT OF SERVICE AND A PROPERTY OF BENJAMIN F.	PROJECT TITLE:	OWNER:	SHEET CONTENT:	
		CAYABYAB, REGISTERED ARCHITECT, & SUCH MUST NOT BE REPRODUCED OR COPIED IN PART OR IN WHOLE WITHOUT HIS PERMISSION.	LEGASPI TOWERS 300 CONDOMINUM UNIT 18N FITOUT RENOVATION PROJECT		VICINITY MAP, GENERAL NOTES, LEGEND, AFSS LAYOUT, FIRE PROTECTION DETAILS	A
PIR NO.:	DATE :	ALL DRAWINGS ARE TO BE RETURNED WHEN		PRIVATIZATION AND MANAGEMENT OFFICE	DRAWN BY: BFC CHECKED BY	: BFC
ISSUED AT :	TIN NO.:	REPUBLIC ACT 9266	LOCATION: 2600 ROXAS BLVD. CORNER PABLO OCAMPO ST., MALATE, MANILA, PHILIPPINES	104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES	DESIGNED BY: BFC DATE STARTED: JA	AN 2020

			1011	5	
D	А	В	R	W×T	КхL
34	80	45	12	25 x 3	M10 x 70
43	90	50	12	25 x 3	M10 x 80
48	95	50	12	25 x 3	M10 x 85
60	105	55	12	25 x 3	M10 × 100
76	115	60	14	40 x 6	M12 x 115
89	125	60	14	40 x 6	M12 x 130
114	145	65	18	40 x 6	M16 x 160
140	165	75	18	40 x 6	M16 x 190
165	185	80	18	40 x 6	M16 x 210

LT 300 CONDOMINUM UNIT 18N FITOUT RENOVATION PROJECT 2 AUTOMATIC FIRE SUPPRESSION SYSTEM LAYOUT FP-1 SCALE 1: 50 MTS

- 1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION AND ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS
- 2. THIS DRAWING IS FOR TENDER PURPOSES ONLY. DETAILED DESIGN AND INSTALLATION DRAWINGS MUST BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATION.
- 3. ALL NEW PIPEWORK TO BE PRESSURE TESTED PRIOR TO THE OPERATION OF THE SYSTEM.
- 4. ALTHOUGH NOT SHOWN AT EACH LOW POINT, DRAIN COCKS SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATION.
- 5. ALL SERVICES IN CEILING VOID AND SERVICE DUCTS TO BE THERMALLY INSULATED
- 6. THE CO-ORDINATION SHOWS DESIGN INTENT FOR CRITICAL AREAS. THEY ARE NOT CONSTRUCTION DRAWINGS, AND THEREFORE DO NOT SHOW ALL BENDS, TEE SETS ETC., THAT MAY BE NECESSARY TO LOCATE SERVICES CORRECTLY TO AVOID CLASHES AND MAXIMIZE MAINTENANCE ACCESS.
- 7. ALL FLOW MEASUREMENT DEVICES SHALL BE INSTALLED WITH AT LEAST 10 DIAMETER OF STRAIGHT PIPE UPSTREAM OF THE FITTING & AT LEAST 5 DIAMETERS OF STRAIGHT PIPE DOWNSTREAM OF THE FITTING.
- 8. THE CONTRACTOR MUST ALLOW FOR ANY NECESSARY CHANGES IN SECTION BETWEEN COMMISSIONING STATIONS & (IN LINE) PIPEWORK
- 9. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH DETAILS OF THE FOLLOWING FOR COMMENT:- (i) PIPE ANCHOR DETAILS (ii) FIXING DETAILS OF PIPEWORK SUPPORTS TO EXISTING ROOF STRUCTURE.
- 10. ALL EXPOSED PIPING SIZING AND PIPING EXPOSED TO OUTSIDE PREMISE SHALL BE G.I SHEET CLADDED.
- 11. BRACKETS AND SUPPORTS ARE NOT SHOWN FOR CLARITY. ALL NECESSARY SUPPORTS / BRACKETING FOR PIPEWORK, FLUES, FLANGES, UNIONS, AIR VENTS, DRAIN COCKS, CABLE TRAY AND PLANT SHALL BE INCLUDED FOR AS DESCRIBED IN THE SPECIFICATION.
- 12. ALL FINAL PIPEWORK ROUTES SHALL BE POSITIONED TO ALLOW THE WITHDRAWAL OF AHU COILS.
- 13. MAXIMUM PRESSURE DROP ACROSS COMPONENTS CAN INCREASE PROVIDED THEY MEET SPECIFICATION AND PRESSURE VALUES ARE ADJUSTED ACCORDINGLY.
- 14 THE INITIAL OPEN VALVE FLOW RATES SHALL BE DETERMINED PRIOR TO COMMISSIONING. THESE SHALL BE REPORTED TO THE ENGINEER TO ENABLE BALANCING FIGURES TO BE ISSUED TO THE CONTRACTOR i.e. A SEPARATE VISIT FOR THE COMMISSIONING VISIT.
- 15. ALL BREAK'INS TO THE EXISTING SERVICES AND DRAINING DOWN SHALL BE CARRIED OUT, ONLY WITH PRIOR ARRANGEMENT WITH THE CLIENT.
- 16. CONTROLS CABLING, ACCESSORIES AND CONTAINMENT OMITTED FOR CLARITY PURPOSES SHALL BE POSITIONED SUCH TO MAINTAIN ADEQUATE ACCESS TO EQUIPMENT FOR MAINTENANCE.

- 17. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 2.1 METERS. CONTRACTOR TO PROVIDE DUCTWORK TO BE EXTENDED WHEN THE MAXIMUM LENGTH IS NOT ACHIEVABLE. THE SIZE OF DUCTWORK SHALL BE SIMILAR OR LARGER IN SECTION AREA AS THAT OF THE FLEXIBLE DUCT.
- 18. THE CONTRACTOR SHALL INCLUDE FOR ALL SECONDARY STEELWORK NECESSARY FOR SERVICE SUPPORTS ETC.
- 19. ALL AIR HANDLING UNIT AND FAN COIL UNIT CONDENSATE DRAINS TO NEAREST DRAINAGE STACK. ALL CONDENSATE DRAIN LINES ARE TO BE INSULATED AS PER SPECIFIED AND WHERE EXPOSED SHALL BE ALUMINUM CLAD.
- 20. ALL TOILETS, SERVICE ROOMS, (ROOMS WHICH HAVE EXTRACT REQUIREMENTS) DOORS SHALL BE PROVIDED WITH DOOR UNDER CUTS (25MM.)
- 21. ALL FLEXIBLE DUCTWORK SHALL BE 1 HOUR FIRE
- 22. ALL EXTERNAL LOUVRES TO BE RAL COLOUR IN ACCORDANCE WITH ARCHITECTS REQUIREMENTS. EXTERNAL LOUVRES SHALL BE C/W BIRDMESH.
- 23. THERMAL INSULATION IS NOT SHOWN FOR CLARITY. ALL NECESSARY THERMAL INSULATION SHALL BE INCLUDED FOR AS DESCRIBED IN THE SPECIFICATION.
- 24. ALL COORDINATION OF GRILLES WITHIN SUSPENDED CEILINGS, WITH LIGHT FITTINGS SHALL BE SUBMITTED FOR APPROVAL (COMMENT BY ENGINEER)
- 25. THIS DRAWING IS FOR TENDER PURPOSES ONLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEYING THE SITE AND PRODUCING FULLY DIMENSIONED
- WORKING/FABRICATION DRAWINGS. ALL WORKING DRAWINGS SHALL BE FULLY COORDINATED WITH OTHER TRADES AND BUILDING DETAILS. INCLUDING CEILING / STEEL DETAILS, FFL TO UNDERSIDE OF DUCT etc.
- 26. COORDINATED WORKING DRAWINGS SHALL BE PRODUCED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER, TAKING INTO CONSIDERATION ALL MEP SERVICES ARCHITECTURAL, STRUCTURAL AND EXISTING SITE SERVICES.
- 27. THE CO-ORDINATION SHOWS DESIGN INTENT FOR CRITICAL AREAS. THEY ARE NOT CONSTRUCTION DRAWINGS, AND THEREFORE DO NOT SHOW ALL BEND TEE SETS ETC., THAT MAY BE NECESSARY TO LOCATE SERVICES CORRECTLY TO AVOID CLASHES AND MAXIMISE MAINTENANCE ACCESS.
- 28. DISCREPANCIES IN THE DRAWINGS SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER PRIOR TO EXECUTION OF ANY WORKS.
- 29. ALL SERVICES SHALL BE INSTALLED CONCEALED WITH SUITABLE ACCESS FOR MAINTENANCE. SERVICES IN EQUIPMENT ROOMS COULD BE EXPOSED, SUBJECT TO THE APPROVAL OF THE ENGINEER.

OTHERS:

- REFRIGERANT PIPES SHALL BE INTERNALLY CLEANED BY SWABBING WITH CLEAN COTTON CLOTH TO REMOVE ALL DUST, BURRS, AND OTHER MISCELLANEOUS DIRT.
- 2. WHILE SOLDERING JOINTS, A SWEEP OF INERT NITROGEN GAS SHOULD BE PASSED THROUGH PIPES TO PREVENT OXIDATION DEPOSITS INSIDE. 3. FITTINGS
- A. USE STANDARD LONG RADIUS COPPER ELBOWS, REDUCERS, ETC. DO NOT USE FIELD-FORMED ELBOWS, REDUCERS, B. JOINTS BETWEEN PIPES SHOULD BE THROUGH STANDARD COPPER COUPLING FORMED FITTING MADE BY SWAGING OR ENLARGING ONE PIPE END TO BE ABLE TO RECEIVE THE OTHER PIPE SECTION WOULD NOT BE ALLOWED. JOINTS TO SCREWED ACCESSORIES SUCH AS EXPANSION VALVES, FILTER DRIER, ETC. SHALL BE MADE WITH STANDARD FLARED FITTINGS.
- 4. THE COMPLETED PIPING INSTALLATION SHOULD BE LEAK TESTED BY SUBJECTING THE SAME BOTH LIQUID AND SUCTION LINE) TO A PRESSURE OF 3100 Pa USING DRY NITROGEN THIS PRESSURE SHOULD BE LEFT FOR 24 HOURS AND IF THERE IS NO NOTICEABLE REDUCTION IN PRESSURE WITHIN THE PERIOD, THE NITROGEN CHARGE SHALL BE RELIEVED DOWN TO 140KPa. TO SERVE AS HOLDING CHARGE WHILE WAITING FOR THE EQUIPMENT CONNECTION. IF THERE IS NOTICEABLE REDUCTION IN THE TEST PRESSURE, LEAK SHOULD BE LOCATED AND REPAIRED.
- 5. PROPERLY TESTED PIPING SHOULD BE SECURELY CAPPED AT BOTH ENDS AND WITH HOLDING CHARGED AS STATED IN ITEM 4 ABOVE WHILE WAITING FOR FINAL CONNECTION TO EQUIPMENT. INSULATE SUCTION PIPING ONLY AFTER PROPER LEAK TESTING.

LEGEND AND SYMBOLS

SYMBOLS	DESCRIPTION
ŀ	WALL MOUNTED ACU
$\left\langle \begin{array}{c} x \\ x \end{array} \right\rangle$	EQUIPMENT IDENTIFICATION
$\widehat{}$	AC CONDENSER UNIT
→ <mark>중</mark> ↔ †	EXHAUST FAN
	EXHAUST DIFFUSER

SPLIT-1	SPLIT-TYPE UNIT AIR CONDITIONING SCHEDULE																	
					SUPPLY FAN OPERATING TEMPERATURE				COMPRESSOR DATA				REFRIGERANT DATA					
MAIN	NO	TYPE	AREA SERVE	COOLING CAPACITY (HP)	AIR FLOW	MOTOR	E.A.T.	EVAPC	RATING	CONDE	ENSING	MOTOR	MOTOR ELECTRICAL SUPPLY		PLY	SIZE (in)		REMARKS
OUTDOOR	INDOOR				LPS	WATTS	۹C	°C	۴F	°C	۴F	(KW)	VOLTS	PH	Hz	LIQUID	GAS	
ACCU-01	ACU-01	WALL MOUNTED	DORMITORY ROOM	2.0	250	100	37	4.44	40	48.8	120	2.0	230	1	60	3/8"	5/8"	DUTY UNIT
ACCU-02	ACU-02	WALL MOUNTED	EXECUTIVE ROOM	1.5	250	100	37	4.44	40	48.8	120	1.5	230	1	60	3/8"	5/8"	DUTY UNIT

FAN SCHE	FAN SCHEDULE												
MARK NO			CAPACITY	STATIC		MOTOR DATA	251412142						
MARK NU	LOCATION	Q11.	SERVICE	TIPE	(LPS)	(PA)	WATTS	RPM	V/PH/HZ	REMARKS			
TEF-01	TOILET AREA	1	TOILET EXHAUST	CEILING MOUNTED	75	60	90	3,600	230/1/60	PROVIDE BACK DRAFT DAMPER			
TEF-02	LAVATORY AREA	1	TOILET EXHAUST	CEILING MOUNTED	75	60	50	3,600	230/1/60	PROVIDE BACK DRAFT DAMPER			

25 mm. TH THER CLOSED CELL	NCK PRE-FORMED MAL ELASTOMERIC TUBE INSULATION NONFLAMMABLE ADHESINE TAPE
	COPPER TUBING
NO.	TE:
1.	CONDENSATE DRAIN PIPE INSULATION SHALL BE OF SIMILAR MATERIAL BUT 19 mm. THICK.
2.	PROVIDE ALUMINUM/G.I SHEET CLADDING FOR OUTDOOR REFRIGERANT PIPING.

M-1 / SCALE

M-1 / SCALE

4 WALL MOUNTED FCU DETAIL

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	OWNER:	SHEET CONTENT:		
00 CONDOMINUM UNIT NOVATION PROJECT		VICINITY MAP, GENERAL NOTES, SYMBOLS,EQUIPMENT SCHEDULE, MECHANICAL LAYOUT, MECHANICAL DETAILS		AP
	PRIVATIZATION AND MANAGEMENT OFFICE	DRAWN BY: BFC	CHECKED BY: BFC	
PABLO OCAMPO ST., MALATE, MANILA, PHILIPPINES	104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES	DESIGNED BY: BFC	DATE STARTED: JAN 2020	

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- 4. ALTHOUGH NOT SHOWN AT EACH LOW POINT, DRAIN COCKS SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATION.
- 5. All services in ceiling void and service ducts to be thermally insulated
- THE CO-ORDINATION SHOWS DESIGN INTENT FOR CRITICAL AREAS. THEY ARE NOT CONSTRUCTION DRAWINGS, AND THEREFORE DO NOT SHOW ALL BENDS, TEE SETS ETC., THAT MAY BE NECESSARY TO LOCATE SERVICES CORRECTLY TO AVOID CLASHES AND MAXIMIZE MAINTENANCE ACCESS.
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- 12. ALL FINAL PIPEWORK ROUTES SHALL BE POSITIONED TO ALLOW THE WITHDRAWAL OF AHU COILS.
- 13. MAXIMUM PRESSURE DROP ACROSS COMPONENTS CAN INCREASE PROVIDED THEY MEET SPECIFICATION AND PRESSURE VALUES ARE ADJUSTED ACCORDINGLY.
- 14. THE INITIAL OPEN VALVE FLOW RATES SHALL BE DETERMINED PRIOR TO COMMISSIONING. THESE SHALL BE REPORTED TO THE ENGINEER TO ENABLE BALANCING FIGURES TO BE ISSUED TO THE CONTRACTOR i.e. A SEPARATE VISIT FOR THE COMMISSIONING VISIT.
- 15. ALL BREAK'INS TO THE EXISTING SERVICES AND DRAINING DOWN SHALL BE CARRIED OUT, ONLY WITH PRIOR ARRANGEMENT WITH THE CLIENT.
- CONTROLS CABLING, ACCESSORIES AND CONTAINMENT OMITTED FOR CLARITY PURPOSES SHALL BE POSITIONED SUCH TO MAINTAIN ADEQUATE ACCESS TO EQUIPMENT FOR MAINTENANCE.

- 17. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 2.1 METERS. CONTRACTOR TO PROVIDE DUCTWORK TO BE EXTENDED WHEN THE MAXIMUM LENGTH IS NOT ACHIEVABLE. THE SIZE OF DUCTWORK SHALL BE SIMILAR OR LARGER IN SECTION AREA AS THAT OF THE FLEXIBLE DUCT.
- THE CONTRACTOR SHALL INCLUDE FOR ALL SECONDARY STEELWORK NECESSARY FOR SERVICE SUPPORTS FTC.
- ALL AIR HANDLING UNIT AND FAN COIL UNIT CONDENSATE DRAINS TO NEAREST DRAINAGE STACK. ALL CONDENSATE DRAIN LINES ARE TO BE INSULATED AS PER SPECIFIED AND WHERE EXPOSED SHALL BE ALUMINUM CLAD.
- 20. ALL TOILETS, SERVICE ROOMS, (ROOMS WHICH HAVE EXTRACT REQUIREMENTS) DOORS SHALL BE PROVIDED WITH DOOR UNDER CUTS (25MM.)
- 21. ALL FLEXIBLE DUCTWORK SHALL BE 1 HOUR FIRE RATED.
- 22. ALL EXTERNAL LOUVRES TO BE RAL COLOUR IN ACCORDANCE WITH ARCHITECTS REQUIREMENTS. EXTERNAL LOUVRES SHALL BE c/w BIRDMESH.
- 23. THERMAL INSULATION IS NOT SHOWN FOR CLARITY. ALL NECESSARY THERMAL INSULATION SHALL BE INCLUDED FOR AS DESCRIBED IN THE SPECIFICATION.
- 24. ALL COORDINATION OF GRILLES WITHIN SUSPENDED CEILINGS, WITH LIGHT FITTINGS SHALL BE SUBMITTED FOR APPROVAL (COMMENT BY ENGINEER)
- 25. THIS DRAWING IS FOR TENDER PURPOSES ONLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEYING THE SITE AND PRODUCING FULLY DIMENSIONED
 - WORKING/FABRICATION DRAWINGS. ALL WORKING DRAWINGS SHALL BE FULLY COORDINATED WITH OTHER TRADES AND BUILDING DETAILS, INCLUDING CEILING / STEEL DETAILS, FFL TO UNDERSIDE OF DUCT etc.
- 26. COORDINATED WORKING DRAWINGS SHALL BE PRODUCED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER, TAKING INTO CONSIDERATION ALL MEP SERVICES, ARCHITECTURAL, STRUCTURAL AND EXISTING SITE SERVICES
- 27. THE CO-ORDINATION SHOWS DESIGN INTENT FOR CRITICAL AREAS. THEY ARE NOT CONSTRUCTION DRAWINGS, AND THEREFORE DO NOT SHOW ALL BEND TEE SETS ETC., THAT MAY BE NECESSARY TO LOCATE SERVICES CORRECTLY TO AVOID CLASHES AND MAXIMISE MAINTENANCE ACCESS.
- DISCREPANCIES IN THE DRAWINGS SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER PRIOR TO EXECUTION OF ANY WORKS.
- ALL SERVICES SHALL BE INSTALLED CONCEALED WITH SUITABLE ACCESS FOR MAINTENANCE. SERVICES IN EQUIPMENT ROOMS COULD BE EXPOSED, SUBJECT TO THE APPROVAL OF THE ENGINEER.

OTHERS:

- 1. REFRIGERANT PIPES SHALL BE INTERNALLY CLEANED BY SWABBING WITH CLEAN COTTON CLOTH TO REMOVE ALL DUST, BURRS, AND OTHER MISCELLANEOUS DIRT.
- WHILE SOLDERING JOINTS, A SWEEP OF INERT NITROGEN GAS SHOULD BE PASSED THROUGH PIPES TO PREVENT OXIDATION DEPOSITS INSIDE.
- 3. FITTINGS:

A. USE STANDARD LONG RADIUS COPPER ELBOWS, REDUCERS, ETC. DO NOT USE FIELD-FORMED ELBOWS, REDUCERS, ETC.

B. JOINTS BETWEEN PIPES SHOULD BE THROUGH STANDARD COPPER COUPLING FORMED FITTING MADE BY SWAGING OR ENLARGING ONE PIPE END TO BE ABLE TO RECEIVE THE OTHER PIPE SECTION WOULD NOT BE ALLOWED. C. JOINTS TO SCREWED ACCESSORIES SUCH AS EXPANSION VALVES, FILTER DRIER, ETC. SHALL BE MADE WITH STANDARD FLARED FITTINGS.

 THE COMPLETED PIPING INSTALLATION SHOULD BE LEAK TESTED BY SUBJECTING THE SAME (BOTH LIQUID AND SUCTION LINE) TO A PRESSURE OF 3100 Pg USING DRY NITROGEN GAS.

THIS PRESSURE SHOULD BE LEFT FOR 24 HOURS AND IF THERE IS NO NOTICEABLE REDUCTION IN PRESSURE WITHIN THE PERIOD, THE NITROGEN CHARGE SHALL BE RELIEVED DOWN TO 140KPG.

TO SERVE AS HOLDING CHARGE WHILE WAITING FOR THE EQUIPMENT CONNECTION. IF THERE IS NOTICEABLE REDUCTION IN THE TEST PRESSURE, LEAK SHOULD BE LOCATED AND REPAIRED.

 PROPERLY TESTED PIPING SHOULD BE SECURELY CAPPED AT BOTH ENDS AND WITH HOLDING CHARGED AS STATED IN ITEM 4 ABOVE WHILE WAITING FOR FINAL CONNECTION TO EQUIPMENT. INSULATE SUCTION PIPING ONLY AFTER PROPER LEAK TESTING.

LEGEND AND SYMBOLS

WALL MOUNTED ACU

AC CONDENSER UNIT

EXHAUST FAN

EXHAUST DIFFUSER

EQUIPMENT IDENTIFICATION

DESCRIPTION

		THIS DRAWING IS AN INSTRUMENT OF SERVICE AND A PROPERTY	PROJECT TITLE :	OWNER :	SHEET CONTENT :		REVISIONS :	SHEET NO.
		OF BENJAMIN F. CAYABYAB, REGISTERED ARCHITECT, & SUCH MUST NOT BE REPRODUCED OR COPIED IN PART OR IN WHOLE WITHOUT HIS PERMISSION.	PROPOSED CONDOMINUM UNIT 18N		MECHANICAL GENERAL NOTES, OTHERS, I AND SYMBOLS, DRAWING DETAILS VICINITY MAP	EGEND APPROVED BY:		M
PTR NO. :	DATE :	ALL DRAWINGS ARE TO BE RETURNED WHEN NO LONGER IN USE.	FILOUT REINOVATION PROJECT	PRIVATIZATION AND MANAGEMENT OFFICE	DRAWN BY : BFC CHECKE	BY : BFC		
ISSUED AT :	TIN :	REPUBLIC ACT 9266	LOCATION : 2600 ROXAS BOULEVARD CORNER PABLO OCAMPO STREET, MALATE, MANILA, PHILIPPINES	104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES	DESIGNED BY : BENJAMIN F. CAYABYAB DATE ST JANU	ARTED:	-	$1 \bigvee$

SYMBOLS

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- 1. ALL PLUMBING WORKS INCLUDED HEREIN SHALL BE EXECUTED ACCORDING TO THE PROVISIONS OF THE NATIONAL PLUMBING CODE, THE NATIONAL BUILDING CODE & THE RULES & REGULATIONS OF CONCERNED MUNICIPALITY.
- 2. COORDINATE THE DRAWING WITH OTHER RELATED DRAWINGS AND SPECIFICATION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY FOUND THEREIN.
- 3. ALL PIPES SHALL BE INSTALLED AS INDICATED ON PLANS. ANY RELOCATIONS REQUIRED FOR PROPER EXECUTION OF OTHER TRADE SHALL BE WITH PRIOR APPROVAL OF THE ARCHITECT OR ENGINEER.
- 4. PROPOSED SANITARY UTILITIES SHALL CONFORM TO THE ACTUAL LOCATION, DEPTH AND INVERT ELEVATION OF ALL EXISTING PIPES AND STRUCTURES AS VERIFIED BY THE CONTRACTOR.
- 5. ALL PIPE SIZES SHOWN ON PLANS ARE NOMINAL SIZES (INSIDE DIAMETER)
- 6. ALL SLOPES FOR HORIZONTAL DRAINAGE SHALL MAINTAIN 1% MINIMUM FOR SANITARY/SEWER PIPES.
- 7. ALL SLOPES FOR HORIZONTAL DRAINAGE SHALL MAINTAIN 0.5% MINIMUM FOR STORM DRAINAGE PIPES.
- 8. SIZE OF WATER SUPPLY PIPES TO FIXTURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 9. ALL EXISTING PIPE SIZES ARE IN INCHES; ALL NEW PIPE SIZES ARE IN MILLIMETERS. 10. THE CONTRACTOR SHALL VERIFY/CHECK AT SITE ALL EXISTING PIPE SIZES, LOCATION AND INVERT ELEVATIONS.
- 11. ALL EXPOSED CONDENSATE DRAIN LINES AND HOT WATER LINES SHALL BE PROVIDED WITH PIPE INSULATION.

MATERIAL SPECIFICATIONS:

PTR NO.:

SSUED AT :

COLD WATER RISER	SHALL BE GALVANIZED STEEL OR IRON, (G.I.) PIPE SCHEDULE 40
(MAIN LINES)	STANDARD CONFORMING TO ASTM A-120-80.
COLD WATER LINE (BRANCHES AND ROUGHING—INS)	SHALL BE HIGH DENSITY PPRC (POLYPROPYLENE RANDOM COPOLYMER) PN–20 PIPE MATERIALS. FITTINGS SHALL BE FUSION WELD TYPE, IMPORTED CONFORMING TO GERMAN TECHNOLOGY DIN 8077–8078 AND ASTM 1281–93.
HOT WATER LINE	SHALL BE HIGH DENSITY PPRC (POLYPROPYLENE RANDOM COPOLYMER) PN—20 PIPE MATERIALS. FITTINGS SHALL BE FUSION WELD TYPE, IMPORTED CONFORMING TO GERMAN TECHNOLOGY DIN 8077–8078 AND ASTM 1281–93.
SEWER LINES/	ALL NEW LINES, STACKS & COLLECTORS SHALL BE POLYVINYL
VENT PIPES	CHLORIDE PIPES (PVC) SERIES 1000.
DOWNSPOUTS/	ALL NEW LINES, DOWNSPOUTS & COLLECTORS SHALL BE POLYVINYL
DRAINAGE LINES	CHLORIDE PIPES (PVC) SERIES 1000.
WASTE LINES	ALL NEW LINES, DOWNSPOUTS & COLLECTORS SHALL BE POLYVINYL CHLORIDE PIPES (PVC) SERIES 1000.
CONDENSATE DRAIN PIPES	SHALL BE POLYVINYL CHLORIDE (PVC) PIPE SERIES 1000 SOLVENT CEMENT JOINT TO ASTM D2564. ALL EXPOSED FCU DRAIN LINES SHALL BE PROVIDED WITH 1/2" THICK CLOSE CELL ELASTOMERIC THERMAL INSULATION.
SUMP PUMP	SHALL BE BLACK IRON (B.I.) PIPE, SCHEDULE 40
DISCHARGE LINE	STANDARD CONFORMING TO ASTM A-53/120.

LEGEND:

WATER DISTRIBUTION SYSTEM

	CWL	COLD WATER LINE
	HWL	HOT WATER LINE
-·-·-·-·-·-•	CWR/CWDF	COLD WATER RISER/DOWNFEED
	GV	GATE VALVE
$-\cdot-\cdot-//-\cdot-\cdot-$	CV	CHECK VALVE
	BVB	BURRIED VALVE BOX
	FC/VC	FLEXIBLE CONNECTOR VICTAULIC COUPLING
	HB	HOSE BIBB
$- \cdot - \cdot + \otimes + \cdot - \cdot -$	WM	WATER METER
—·—·—I —·—·_	UP	UNION PATENTE
	FV	FLOAT VALVE

WASTE, SEWER & VENT SYSTEM

	SP	SEWER/SOIL PIPE
	VP	VENT PIPE
0	SS/VS	SOIL/VENT STACK
G+D	VSTR/VSTD	VENT STACK THRU ROOF/DECK
+⊗	FCO	FLOOR CLEANOUT
	CCO/WCO	CEILING CLEANOUT/WALL CLEAN
	FD	FLOOR DRAIN
	WP	WASTE PIPE
RAINAGE SYS	STEM	
	DP	DRAIN PIPE
	CDP	CONDENSATE DRAIN PIPE
5-3		INSULATION

EIB	
\boxtimes	AD/CB
\otimes	GD/DD
	DJB
	TDG

_____ SP

— — — — DP

DRAIN PIPE CONDENSATE DRAIN PIPE INSULATION AREA DRAIN/CATCH BASIN D/TD GUTTER/DECK/TRENCH DRAIN DRAINAGE JUNCTION BOX TRENCH DRAIN & GRATING

CEILING CLEANOUT/WALL CLEANOUT

EXISTING UTILITIES ----- CWL COLD WATER LINE

> SEWER/SOIL PIPE DRAIN PIPE

PLUMBING FIXTURES

	LAV	LAVATORT
\bigcirc \bigcirc	WC	WATER CLOSET
	KS	KITCHEN SINK
	UR	URINAL
	S	SLOPE
\bigcirc	EWH	STORAGE TYPE ELECTRIC WATER HEATER

	ABBREV	IATIONS:
THE SITE UNIT 18N LEGASPI TOWERS 300 2600 ROXAS BLVD. CORNER PABLO OCAMPO ST., MALATE, MANILA, PHILIPPINES MANILA YACHT CLUB CELTURAL CENTER OF THE	APPROX. AF B.I. BL BLDG. BU EXIST. EX C.I. C/ CU.M CU DIA/Ø DI DN. DO FLR FL FT. FE GALS G/ G.I. G/ GPM G/ HL HI HP HO I.E. IN IN./" IN LVL. LE PIPE SCHEDU OR COLD AI	PROXIMATE ACK IRON JILDING (ISTING ST IRON JBIC METER AMETER JWN .OOR ET ALLONS ALVANIZED IRON ALLONS PER MINUT GH LEVEL DRSE POWER VERT ELEVATION CHES WEL JLE FOR PPR, ND HOT WATE
· · · · · · · · · · · · · · · · · · ·	PIPE SIZE AS PER PLAN	COMMERCIAL SIZE (OUTSIDE DIAMETER)
	-	16
STAR CITY	15MMø	20
	20MMø	25
	25MMø	32
	32MMØ	40
	40MMø	50
	50MMø	63
	65MMø	75

IT 300 CONDOMINUM UNIT 18N FITOUT RENOVATION PROJECT

1 V I C I P-1 SCALE	N I T Y M A P NTS	100MMø – – PE SCHEDULE FOR	110 125 160 PPR/XLPE PIPES	90 110 125	-
	THIS DRAWING IS AN INSTRUMENT SERVICE AND A PROPERTY OF BENJAMI	OF PI NF.	ROJECT TITLE	:	
	CAYABYAB, REGISTERED ARCHITECT, & S MUST NOT BE REPRODUCED OR COPIEL PART OR IN WHOLE WITHOUT PERMISSION.	SUCH D IN HIS L		TOWERS	2
DATE :	ALL DRAWINGS ARE TO BE RETURNED V	WHEN	ION	FIIUUI	П
TIN NO.:	NO LONGER IN USE.) ROXAS BLVD C	

- WITH

MAX.

MIN.

MM

N.C.

PPRC

PVC

SQ.M

STD

TYP.

TDH

W/

51

63

75

HIGH LEVEL HORSE POWER INVERT FLEVATION

GALVANIZED IRON GALLONS PER MINUTE

N./" IN N./" IN VL. LE PE SCHEDU DR COLD AI	vert elevation ches vel V LE FOR PPR/XL ND HOT WATER	_PE PIPES LINES
PIPE SIZE AS PER PLAN	COMMERCIAL SIZE (OUTSIDE DIAMETER)	NOMINAL SIZE (INSIDE DIAMETER)
_	16	12
15MMø	20	16
20MMø	25	20
25MMø	32	25
32MMø	40	32
40MMø	50	41
	-	-

63 75

90

75MMø

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- ALL PIPE SIZES SHOWN ON PLANS ARE NOMINAL SIZES (INSIDE DIAMETER) 5.
- SLOPES FOR HORIZONTAL DRAINAGE SHALL MAINTAIN 1% MINIMUM 6. ALL FOR SANITARY/SEWER PIPES.
- ALL SLOPES FOR HORIZONTAL DRAINAGE SHALL MAINTAIN 0.5% MINIMUM 7. FOR STORM DRAINAGE PIPES.
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- 11. ALL EXPOSED CONDENSATE DRAIN LINES AND HOT WATER LINES SHALL BE PROVIDED WITH PIPE INSULATION.

MATERIAL SPECIFICATIONS:

COLD WATER RISER (MAIN LINES)	SHALL BE GALVANIZED STEEL OR IRON, (G.I.) PIPE SCHEDULE 40 STANDARD CONFORMING TO ASTM A-120-80.
COLD WATER LINE (BRANCHES AND ROUGHING-INS)	SHALL BE HIGH DENSITY PPRC (POLYPROPYLENE RANDOM COPOLYMER) PN-20 PIPE MATERIALS. FITTINGS SHALL BE FUSION WELD TYPE, IMPORTED CONFORMING TO GERMAN TECHNOLOGY DIN 8077-8078 AND ASTM 1281-93.
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SEWER LINES/ VENT PIPES	ALL NEW LINES, STACKS & COLLECTORS SHALL BE POLYVINYL CHLORIDE PIPES (PVC) SERIES 1000.
DOWNSPOUTS/ DRAINAGE LINES	ALL NEW LINES, DOWNSPOUTS & COLLECTORS SHALL BE POLYVINYL CHLORIDE PIPES (PVC) SERIES 1000.
WASTE LINES	ALL NEW LINES, DOWNSPOUTS & COLLECTORS SHALL BE POLYVINYL CHLORIDE PIPES (PVC) SERIES 1000.
CONDENSATE DRAIN PIPES	SHALL BE POLYVINYL CHLORIDE (PVC) PIPE SERIES 1000 SOLVENT CEMENT JOINT TO ASTM D2564. ALL EXPOSED FCU DRAIN LINES SHALL BE PROVIDED WITH 1/2" THICK CLOSE CELL ELASTOMERIC THERMAL INSULATION.
SUMP PUMP DISCHARGE LINE	SHALL BE BLACK IRON (B.I.) PIPE, SCHEDULE 40 STANDARD CONFORMING TO ASTM A-53/120.

FGEND:

WATER DISTRIBUTION SYSTEM

··	CWL	COLD WATER LINE
	HWL	HOT WATER LINE
·•	CWR/CWDF	COLD WATER RISER/DOWNFEED
$-\cdot - \lor -$	GV	GATE VALVE
$-\cdot - 1/1 - \cdot -$	CV	CHECK VALVE
— · — 🖂 — · —	BVB	BURRIED VALVE BOX
	FC/VC	FLEXIBLE CONNECTOR VICTAULIC COUPLING
	HB	HOSE BIBB
	WM	WATER METER
	UP	UNION PATENTE
-·-·-	FV	FLOAT VALVE

WASTE, SEWER & VENT SYSTEM

	SP VP SS/VS VSTR/VSTD FCO CCO/WCO	SEWER/SOIL PIPE VENT PIPE SOIL/VENT STACK VENT STACK THRU ROOF/DECK FLOOR CLEANOUT CEILING CLEANOUT/WALL CLEANOUT
Ц	FD	FLOOR DRAIN
	WP	WASTE PIPE
DRAINAGE SYS	STEM	
	DP	DRAIN PIPE
	CDP	CONDENSATE DRAIN PIPE
63		INSULATION
\boxtimes	AD/CB	AREA DRAIN/CATCH BASIN
\otimes	GD/DD/TD	GUTTER/DECK/TRENCH DRAIN
	DJB	DRAINAGE JUNCTION BOX
	TDG	TRENCH DRAIN & GRATING

COLD WATER LINE

SEWER/SOIL PIPE

DRAIN PIPE

EXISTING UTILITIES

Γ

CWI _____ SP DP ____

PLUMBING FIXTURES

- (°) LAV LAVATORY 0 0 WC WATER CLOSET KS KITCHEN SINK UR URINAL
 - SLOPE ____ S
 - STORAGE TYPE EWH ELECTRIC WATER HEATER

ABBREVIATIONS:

PPROX.	APPROXIMATE
3.1.	BLACK IRON
BLDG.	BUILDING
XIST.	EXISTING
).I.	CAST IRON
CU.M	CUBIC METER
DIA/ø	DIAMETER
DN.	DOWN
'LR	FLOOR
т.	FEET
ALS	GALLONS
S.I.	GALVANIZED IRON
₽ M	GALLONS PER MIN
IL	HIGH LEVEL
IP	HORSE POWER
.E.	INVERT ELEVATION
N./"	INCHES
.VL.	level PIPE
	FOR
	I PIPE

	MIN.	MINIMUM
	MM	MILLIMIETER
	N.C.	NORMALLY CLOSED
	PPRC	POLYPROPYLENE RANDOM
	PVC	POLYVINYL CHLORIDE
	SQ.M	SQUARE METER
	STD	STANDARD
	TYP.	TYPICAL
	TDH	TOTAL DYNAMIC HEAD
	W/	WITH
	•	
E(ע/ מתח מר	
1.1		

MAXIMUM

IPE SCHEDULE FOR PPR/XLPE PIPES R COLD AND HOT WATER LINES

MINUTE

мах

PIPE SIZE AS PER PLAN	COMMERCIAL SIZE (OUTSIDE DIAMETER)	NOMINAL SIZE (INSIDE DIAMETER)
-	16	12
15MMØ	20	16
20MMø	25	20
25MMØ	32	25
32MMø	40	32
40MMØ	50	41
50MMØ	63	51
65MMØ	75	63
75MMØ	90	75
100MMø	110	90
-	125	110
-	160	125

PIPE SCHEDULE FOR PPR/XLPE PIPES

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND A PROPERTY OF BENJAMIN F. CAYABYAB, REDISTERED ARCHITECT, & SUCH MUST NOT BE REPRODUCED OR COPIED IN PART OR IN WHOLE PROJECT TITLE : OWNER : PROPOSED CONDOMINUM UNIT 18N WITHOUT HIS PERMISSION FITOUT RENOVATION PROJECT ALL DRAWINGS ARE TO BE RETURNED WHEN NO LONGER USE. DRAWN BY : BFC CHECKED BY : BFC PTR NO. DATE : PRIVATIZATION AND MANAGEMENT OFFICE 104 GAMBOA STREET, LEGASPI VILLAGE, MAKATI CITY, PHILIPPINES ISSUED AT . LOCATION : 2600 ROXAS BOULEVARD CORNER PABLO OCAMPO STREET, MALATE, MANILA, PHILIPPINES DESIGNED BY : BENJAMIN F. CAYABYAB DATE STARTED: JANUARY 2 TIN : REPUBLIC ACT 9266

2000CWL 2000CWL	2000WL (PPR) TAP TO EXIST. LAVATORY TAP STUBOUT SP STUBOUT PROVIDE CLEANOUT S200CWL (PPR) 320CWL (PPR)	off child	200°CWL (PPR) P VERIFY STE TO EXISTING TAP TO EXIST VERIFY ACTUA VERIFY STE STE 25MM & COS	TING SP. AL ON
PROPOSED CONDOMINUM (1 TOILET AND BA P-3 SCALE	UNIT 18N FITOUT RENOVATION PROJECT TH ISOMETRIC LAYOUT NTS	PROPOSED CON 2 KITCHE P-3 SCALE	DOMINUM UNIT 18N FITOUT RENOVATION PROJECT NISOMETRIC LAYOUT NTS	
THIS DRAWING IS AN INSTRUMENT OF SERVICE AND A PROPER OF BEDNAMINE F: CANADRA, REGISTERED ANALTEL, & SUL MUSTI NOT IS REPARADUCED OF AN WHOI MITHOUT INS FERMISSION. ALL DRAWINGS ARE TO BE RETURNED WHEN NO LONGER USE.		OWNER : PRIVATIZATION AND MANAGEMENT OFFICE ION CANNOL STREET LEDGEN WILLION WAVELOUTLY BUILDEDNES	SHEET CONTENT : REV TOILET AND BATH ISOMETRIC LAYOUT KITCHEN ISOMETRIC LAYOUT DRWIN BY : BFC DESIGNED BY : BELWIN F. CAVIEWAB DATE STARTED:	ISIONS : SHEET NO.

Privatization and Management Office

PROJECT TITLE : LT300 Unit 18N Condominium Unit Renovation

PROJECT LOCATION SUBJECT Unit 18N, Legaspi Tower 300, 2600 Ocampo St., Malate, Manila, 1004 Metro Manila

Civil Works Bid Form

CONTRACTOR :

ITEM		QTY.	UNIT			ESTIMATED DIRECT	COST		MARK-UPS	IN PERCENT	TOT	AL MARK-UPS				
NO.	DESCRIPTION			MATERIAL UNIT COST	LABOR UNIT COST	TOTAL MATERIAL COST	TOTAL LABOR COST	TOTAL LABOR AND MATERIAL COST	ОСМ	PROFIT	%	VALUE	VAT	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
I.	GENERAL REQUIREMENTS															
1.1	Mobilization	1.00	lot						0%	0%	0%					
1.2	Demobilization, hauling and final cleaning prior to turnover	1.00	lot						0%	0%	0%					
1.3	Delivery and Tools & Equipment	1.00	lot						15%	10%	25%					
1.4	Water & Power consumption during construction	1.00	lot						15%	10%	25%					
1.5	Regular cleaning of jobsite during renovation	1.00	lot						15%	10%	25%					
1.6	As-Built Plan	1.00	lot						15%	10%	25%					
1.7	Securing and payment of all necessary permits including building permit, clearances, insurances and bonds necessary for the project	1.00	lot						15%	10%	25%					
1.8	Personnel swab testing and other necessary medical tests and certification as required by the building management	1.00	lot						15%	10%	25%					
1.9	Building administration facilities and utilities	1.00	lot						15%	10%	25%					
1.10	Roughing-in works and repair works for neighboring units as required for the construction	1.00	lot						15%	10%	25%					
1.10	Others															
	SUBTOTAL COST:															
II.	SITE CONSTRUCTION		1	1	1	1		1	1		-		1	-		
2.1	Demolition of existing concrete walls	12.00	sq.m.						15%	10%	25%					
2.2	Dismantling of existing wall and floor tiles at toilet and	50.00	sq.m.						15%	10%	25%					
2.3	Dismantling of existing ductworks, doors and windows not subject for reuse	1.00	lot						15%	10%	25%					
2.4	Dismantling of existing kitchen & toilet and bath fixtures, counter tops, grease traps, utility lines and all other items not subject for reuse.	1.00	lot						15%	10%	25%					
2.5	Site clearing and disposal of dismantled and demolished debris	1.00	lot						15%	10%	25%					
2.6	Others															
	SUBTOTAL COST:															
	MASONRY WORKS		1	1	1	1	1	1	1	1	-		1	1	1	1
3.1	Construction of 100mm concrete hollow blocks complete with mortar and 10mm diameter reinforcing bars spaced every 600mm on center both ways.	7.25	sq.m.						15%	10%	25%					
3.2	25mm thick cement plaster	14.50	sq.m.						15%	10%	25%					
3.3	18mm thick salt and pepper granite counter top for kitchen counter and lavatory counter complete with fascia and splashboard. Contractor to apply necessary sealers and verify corner profile termination to designer. Submit sample for approval.	1.00	slabs						15%	10%	25%					
3.4	Others															
	SUBTOTAL COST:															
VII.	THERMAL AND MOISTURE PROTECTION			-	1											
7.1	Supply, delivery and application of cementitious waterproofing as per manufacturer's standards at toilet & bath and balcony. Apply to flooring and walls up to 300mm from floor.	22.00	sq.m.						15%	10%	25%					
7.2	Others															L
	SUBTOTAL COST:															
VIII.	DOORS AND WINDOWS															

8.1	Existing entrance door to be retained and refurbished. All hardware subject for replacement with new equivalent quality (Heavy duty entrance double handle set, 4 sets stainless steel ball bearing butterfly hinges, single cylinder deadbolt, door viewer). Install new set stainless steel chain bolt, door seal with brush and door stopper. Contractor to present sample hardware and accessories for approval. Existing door panel and jamb subject for surface repair and repainting using quick drying enamel as per manufacturer's standards. Submit sample for approval.	1.00	set				15%	10%	25%			
8.2	Supply, delivery and installation of new set flush door 900mm x 2100mm with 50mm x 100mm solid kiln dried door jamb. Flush door shall be equipped with solid wood frame and 6mm thick marine plywood at both faces. Door panel and jamb shall be painted using quick drying enamel as per manufacturer's standards. Install stainless steel hardware (entrance lever type lockset, 4 sets stainless steel ball bearing butterfly hinges and door stopper). Submit sample for approval.	2.00	sets				15%	10%	25%			
8.3	Supply, delivery and installation of new set flush door 700mm x 2100mm with 50mm x 100mm solid kiln dried door jamb. Flush door shall be equipped with solid wood frame and 6mm thick marine plywood at both faces and 500mm (H) x 500mm (W) louvers with 50mm x 50mm wood frame and wood louvers. Door panel and jamb shall be painted using quick drying enamel as per manufacturer's standards. Install stainless steel hardware (privacy lever type lockset, 4 sets stainless steel ball bearing butterfly hinges and door stopper). Submit sample for approval.	1.00	set				15%	10%	25%			
8.4	Supply delivery and installation of new set flush door 600mm x 2100mm with 50mm x 100mm solid kiln dried door jamb. Flush door shall be equipped with solid wood frame and 6mm thick marine plywood at both faces and 500mm (H) x 400mm (W) louvers with 50mm x 50mm wood frame and wood louvers. Door panel and jamb shall be painted using quick drying enamel as per manufacturer's standards. Install stainless steel hardware (privacy lever type lockset, 4 sets stainless steel ball bearing butterfly hinges and door stopper). Submit sample for approval.	2.00	sets				15%	10%	25%			
8.5	Supply, delivery and installation of combination of 2 sets 875mm x 1180mm fixed windows with 6mm thick tempered glass on powder coated aluminum frame complete with gaskets and sealants; and sliding glass door (opening dimensions of 1750mm x 2120mm) panel using 6mm thick tempered glass on powder coated aluminum frame complete gaskets and sealants, with insect screen as per manufacturer's standards. Provide built-in sliding door lock as per manufacturer's standards. Submit swatches for powder coating and aluminum frame section for approval.	1.00	set				15%	10%	25%			
8.6	Supply, delivery and installation of combination of 600mmW x 400mmH awning glass window using 3mm thick tempered glass with powder coated aluminum frame complete with necessary gaskets, sealants and hardware as per manufacturer's standards. Submit swatches for powder coating and aluminum frame section and hardware for approval.	4.00	sets				15%	10%	25%			
8.7	Supply, delivery and installation of combination of 600mmW x 400mmH awning glass window using 6mm thick tempered glass with powder coated aluminum frame complete with necessary gaskets, sealants and hardware as per manufacturer's standards. Submit swatches for powder coating and aluminum frame section and hardware for approval.	2.00	sets				15%	10%	25%			
8.8	SUBTOTAL COST:						15% 15%	10%			+	
IX.	FINISHES			1	1	1				1	1	·

9.1	Supply, delivery and construction of drywall using 9mm thick fiber cement board with 0.5mm x 75mm metal stud and tracks framing spaced every 400mm on center both ways complete with necessary accessories such as aluminum corner beads, rivets, etc.	53.00	sq.m.			15%	10%	25%			
9.2	Supply, delivery and construction of ceiling using 9mm thick gypsum board with 0.5mm x 19mm x 50mm double furring channel spaced every 600mm on center, both ways complete with necessary fasteners and accessories as per manufacturer's standards. Contractor to provide 12mm x 12mm Z bead shadow line moulding at wall and ceiling perimeter.	72.80	sq.m.			15%	10%	25%			
9.3	Existing interior wall surfaces and drywall surfaces subject for surface preparation and painting using odorless latex paint as per manufacturer's standards. Submit paint swatches for approval.	205.76	sq.m.			15%	10%	25%			
9.4	Ceiling surfaces subject for surface preparation and painting using odorless flat latex paint as per manufacturer's standards. Submit paint swatches for approval.	72.80	sq.m.			15%	10%	25%			
9.5	Exterior wall surfaces subject for surface preparation and painting using elastomeric painting as per manufacturer's standards.	24.00	sq.m.			15%	10%	25%			
9.6	Supply, delivery and installation of 400mm x 400mm non- skid ceramic floor tiles complete with tile adhesive and anti- bacterial grout. Contractor to present swatches for approval.	67.00	sq.m.			15%	10%	25%			
9.7	Supply, delivery and installation of 300mm x 300mm non- skid ceramic floor tiles complete with tile adhesive and anti- bacterial grout for toilet and bath. Contractor to present swatches for approval.	6.20	sq.m.			15%	10%	25%			
9.8	Supply, delivery and installation of 300mm x 300mm glazed ceramic wall tiles complete with tile adhesive and anti- bacterial grout for toilet and bath. Contractor to present swatches for approval.	13.10	sq.m.			15%	10%	25%			
9.10	Supply, delivery and installation of 10mm x 10mm square section PVC tile trim	14.60	l.m.			15%	10%	25%			
9.11	Supply, delivery and installation of 300mm x 300mm glazed ceramic wall tiles complete with tile adhesive and anti- bacterial grout for kitchen splash board. Contractor to present swatches for approval.	1.20	sq.m.			15%	10%	25%			
9.12	SUBTOTAL COST:										
Х.	SPECIALTIES				1						
10.1	Supply, delivery and installation of kitchen base cabinet and shelves using 18mm thick melamine white stipple laminated faces on marine plywood substrate for carcass and doors using 18mm thick melamine wood grain laminate for exterior face and melamine white stipple interior face on marine plywood substrate complete with open shelvings using 18mm thick melamine wood grain laminated faces on marine plywood substrate. Provide 6mm thick melamine white stipple laminate on one face on marine plywood substrate. All exposed edges to be provided with 1mm thick x 22mm PVC edgeband. All laminates and edgebands shall be machine applied. Provide ABS plastic plinth foot, 3 sets concealed stainless steel 304 per door leaf, continuous aluminum handle and shelf support. Contractor to submit swatches and hardware samples for approval. Provide 18mm thick melamine white stipple laminated on one face marine plywood for granite countertop substrate with laminated face exposed at cabinet interior.	1.00	set			15%	10%	25%			
	SUBTOTAL COST:										
VIII	SDECIAL CONSTRUCTION										

13.1	Supply, delivery and installation of brass pendent type sprinkler head complete with escucheon and necessary accessories as per manufacturer's standards.	9.00	set			15%	10%	25%			
13.2	Supply and installation of Black Iron Pipes, Schedule 40,or approved equal, including fittings, painting, sleeves, supports, hangers and other miscellaneous items as shown and as required to complete the system										
13.2.1	50mm diameter	9.00	l.m.			15%	10%	25%			
13.2.2	25mm diameter	19.50	l.m.			15%	10%	25%			
13.3	Others										
	SUBTOTAL COST:										
XVI.	MECHANICAL										
	SANITARY AND PLUMBING										
15.1	Sanitary line Installation. Installation of Polyvinyl Chloride (PVC) pipes, Series 1000 II or approved equal, including fittings, painting, sleeves, supports, hangers and other										
	miscellaneous items as shown and as required to complete										
	the system										
15.1.1	50mm diameter	25.00	l.m.			15%	10%	25%			
15.1.2	75mm diameter	25.00	l.m.			15%	10%	25%			
15.1.3	100mm diameter	25.00	l.m.			15%	10%	25%			
15.1.4	Supply, delivery and installation of 100mm diameter wall cleanout for lavatory drain tapping point.	1.00	set			15%	10%	25%			
15.1.5	Supply, delivery and installation of 50mm diameter wall cleanout for lavatory drain tapping point.	1.00	set			15%	10%	25%			
15.2	Vent line Installation. Installation of owner supplied Polyvinyl Chloride (PVC) pipes, Series 1000 II or approved equal, including fittings, painting, sleeves, supports, hangers and other miscellaneous items as shown and as required to complete the system										
15.2.1	50mm diameter	6.00	l.m.			15%	10%	25%			
15.3	Supply, delivery and installation of stainless steel 304 grease trap 4GPM compete with necessary strainers and accessories.	1.00	set			15%	10%	25%			
15.4	Cold water supply (roughing-in). Installation of High Density Polypropylene Random Copolymer (PPR) pipes, Class PN- 20 including fittings, painting, sleeves, support, hangers, and other miscellaneous items as shown and as required to complete the system.										
15.4.1	32mm diameter	3.00	l.m.			15%	10%	25%			
15.4.2	20mm diameter	15.00	l.m.			15%	10%	25%			
15.4.3	32mm diameter gate valve	2.00	sets			15%	10%	25%			
15.5	Toilet and bath fixtures (Supply, delivery and installation)					15%	10%				
15.5.1	364mm x 743mm x 764mm. Top flush/ dual flush for 3/6L water closet complete with soft-close and anti-bacterial seat cover. Contractor to provide angle valve, wax flange, flexible hose and fixation set.	1.00	set			15%	10%	25%			
15.5.2	Wall hung porcelain lavatory basin 560 x 475mm with nano coating with half pedestal, complete with necessary accessories and p traps as per manufacturer's standards	1.00	set			15%	10%	25%			
15.5.3	Brass wall mounted tap with hose connector for shower complete with escucheon and accessories as per manufacturer's standards.	1.00	set			15%	10%	25%			
15.5.4	Stainless steel faucet pillar with brass fittings complete with flexible hose and accessories as per manufacturer's standards.	1.00	set			15%	10%	25%			
15.5.5	Stainless steel shower bidet with brass fittings complete with flexible hose, holder and accessories as per manufacturer's standards.	1.00	set			15%	10%	25%			
15.5.6	Stainless steel floor drain with strainer complete with insect proofing (100mm x 100mm)	2.00	sets			15%	10%	25%			
15.6	Kitchen fixtures (Supply, delivery and installation)					15%	10%				
15.6.1	920mm x 430mm x 150mmD bright satin stainless steel 304 kitchen sink with wash tray complete with p traps, drains and accessories as per manufacturer's standards.	1.00	set			15%	10%	25%		 	

	Stainless steel kitchen faucet cold water line only complete													1
15.6.2	with flexible hose and accessories.	1.00	set					15%	10%	25%				
	MECHANICAL													
15.7	Toilet exhaust fan													
10.1	300mm x 300mm ceiling exhaust fan complete with plastic													
15.7.1	diffuser grilles with exhaust flap. 230V 60Hz 26W 8.2 cu.m./ minute 48dB	2.00	sets					15%	10%	25%				
15.7.2	300mm x 300mm ceiling exhaust air vent complete with plastic diffuser grille cover with insect screen.	1.00	set					15%	10%	25%				
15.7.3	Exhaust vent line. Installation of 75mm diameter Polyvinyl Chloride (PVC) pipes, Series 1000 II or approved equal, including fittings, painting, sleeves, supports, hangers and other miscellaneous items as shown and as required to complete the system	6.00	l.m.					15%	10%	25%				
15.8	Others													'
	SUBTOTAL COST:													<u> </u>
XVI.	ELECTRICAL			P 1	1	1	1	1		1	1	1	r	
16.1	Wires, conduits and roughing-ins													
16.1.1	Panel board - 10 - 2 pole bolt on	1.00	set					15%	10%	25%				<u> </u>
16.1.2	Main CB 90AT, 100AF, 1P, 230V	1.00	set					15%	10%	25%				
16.1.3	30 AT Circuit Breaker	6.00	set					15%	10%	25%				<u> </u>
16.1.4	20 AT Circuit Breaker	4.00	set					15%	10%	25%				<u> </u>
16.1.5	15mm diameter EMT pipe	36.00	lengths					15%	10%	25%				<u> </u>
16.1.6	32mm diameter EMT pipe	4.00	lengths					15%	10%	25%				<u> </u>
16.1.7	32mmØ EMT Coupling	10.00	pcs					15%	10%	25%				
16.1.8	32mmØ EMT Connector	10.00	pcs					15%	10%	25%				
16.1.9	15mm diameter flexible metal conduit	28.20	I.m.					15%	10%	25%				
16.1.10	15mmØ EMT Coupling	100.00	pcs					15%	10%	25%				
16.1.11	15mmØ EMT Connector	80.00	pcs					15%	10%	25%				
16.1.12	15mmØ Flexible Metal Adaptor & Locknut	120.00	pcs					15%	10%	25%				
16.1.13	4" x 4" x 2" Octagonal Box, Gauge 16, Zinc-Chromate with Cover	47.00	sets					15%	10%	25%				
16.1.14	2" x 4" Utility Box, Gauge 16, Zinc-Chromate	28.00	sets					15%	10%	25%				
16.1.15	22mm ² THHN Wire	30.00	I.m.					15%	10%	25%				
16.1.16	5.5mm ² THHN Wire	100.00	I.m.					15%	10%	25%				
16.1.17	3.5mm ² THHN Wire	450.00	I.m.					15%	10%	25%				
16.1.18	Electrical tape	20.00	rolls					15%	10%	25%				
16.1.19	Telephone cable	10.00	I.m.					15%	10%	25%				<u> </u>
16.2	Fixtures and plates							15%	10%					<u> </u>
16.2.1	9W LED daylight slim type downlight lighting fixture panel	27.00	sets					15%	10%	25%				
16.2.2	6W LED warm white slim type downlight lighting fixture	14.00	sets					15%	10%	25%				<u> </u>
16.2.3	2 gang wide series single-way switch with cover	5.00	sets					15%	10%	25%				
16.2.4	1 gang wide series single-way switch with cover	4.00	sets					15%	10%	25%				
16.2.5	Duplex Convenience Outlet	14.00	sets					15%	10%	25%				<u> </u>
16.2.6	Single Convenience Outlet	3.00	sets					15%	10%	25%				
16.2.7	Weather proof duplex outlet	1.00	sets					15%	10%	25%				<u> </u>
16.2.8	Telephone outlet	1.00	sets					15%	10%	25%				
16.2.9	Tandem Outlet for Special Purpose Usage	6.00	sets					15%	10%	25%				
16.2.10	Heavy duty emergency light fixture	3.00	sets					15%	10%	25%				
	SUBTOTAL COST:													
	GRAND TOTAL COST:													

NOTE:

1.0 All utility systems are subject for testing such as meger testing for electrical system, pressure test for water lines, leak test for water lines, flood testing for waterproofed areas, etc.

2.0 All test to be done on the site shall be care of the contractor. The contractor shall issue a notice to the owner or designer to witness testing and shall issue a certificate of completion for every tests.

3.0 All materials and equipment manuals are to be compiled and turnovered to the end user upon project completion.

4.0 The contractor shall coordinate with the building administration to verify guidelines and considerations pertaining to the renovation project.

5.0 Upon closing of walls and ceilings, the contractor shall inform the client or the designer to inspect all utilities to be hidden within the said cavities.

Submitted by:

Privatization and Management Office

PROJECT TITLE LT300 Unit 18N Condominium Unit Renovation

PROJECT LOCATION : Unit 18N, Legaspi Tower 300, 2600 Ocampo St., Malate, Manila, 1004 Metro Manila

Equipment and Appliances Bid Form SUBJECT :

CONTRACTOR :

DATE:

ITEM NO.	IMAGE REFERENCE	DESCRIPTION	QTY.	UNIT	UNIT COST	ESTIMATED DIRECT COST	MARK-UPS	IN PERCENT PROFIT	T01 %	AL MARK-UPS	VAT	TOTAL INDIRECT	TOTAL COST	UNIT COST
l.	DORMITORY ROOM													
1.1		2.0 hp Basic Inverter Wall Mounted Split-type AR5500T Basic Inverter S-Inverter Digital Inverter Boost Fast Cooling Mode Triple protector plus Durafin tm Quiet mode Single user mode R32 Refrigerant 1 year warranty on parts and labor, 10 years on comp.	1.00	set			12%	12%	24%					
1.2		Split-type installation and piping works Inclusive of wires, pipes, insulations and other material requirements and consumables. Installation of outdoor unit complete with steel brackets as per manufacturer's standards. 1 year warranty on labor and instalaltion	1.00	set			12%	12%	24%					
II.	LIVING AND DINING AREA													
2.1		32 inch, HD Ready, Smart TV 46.54cmH x 73.74cmL x 15.05cmW LED Display Panel Connect share movie Clean view, Game mode basic Digital TV ISDB-T Motion Rate: 60 1 year warranty	1.00	set			12%	12%	24%					
2.2	<u></u>	Full motion wall mounted screen bracket 6 swing arms	1.00	sets			12%	12%	24%					
III.	KITCHEN EQUIPMENT AND APPLIANCES		1		1				1	1	1	1		T
3.1	1	6.6 cu.ft. two door inverter type refrigerator and freezer, manual defrost Silm Durable LED lamp Deep freezer Uses R-600a refrigerant	1.00	sets			12%	12%	24%					

ITEM	IMAGE REFERENCE	DESCRIPTION	QTY.	UNIT	UNIT COST	ESTIMATED	MARK-UPS	IN PERCENT	TOT	AL MARK-UPS	VAT	TOTAL INDIRECT	TOTAL COST	UNIT COST
NO.						DIRECT COST	OCM	PROFIT	%	VALUE		COST		
3.2	Herroliki Contraction of the second sec	Plate Stainless Steel Hobs Built-in stainless steel Hot plate 1 - 2.0kW Hote plate 2 - 1.5kW	1.00	set			12%	12%	24%					
3.3	Alter and a	Rangehood 1 motor Wall mounted Stainless Steel Finish With filter screen	1.00	set			12%	12%	24%					
3.4	Rear	20 Liters, Microwave oven 27.9cmH x 31.8cmL x 45.7cmW Mechanical control Variable cooking levels Defrost function	1.00	рс			12%	12%	24%					
3.5		10 cups, coffee maker 10 cups/ 1.2L capacity 900 watts 230 volts Anti-drip functions Long life permanent filter Heat resistant glass carafe Removable accessories for easy cleaning 1 year limited warranty on parts, lifetime on labor and service	1.00	рс			12%	12%	24%					
3.6		Hot and cold water dispenser 550 watts Temperature selection Anti-slip faucet handles	1.00	pc			12%	12%	24%					
		Independent fire heat alarm & security horn 12VDC Heat alarm features Flash alarm indicator (Red) - self-test function - low battery signal and safety clip feature High stability and reliability - Loud 85dB alarm signal 12V power source; relative humidity - 10% -95% Operating Current: <100uA (Standby) and 10-15mA (Alarm working) Horn level: 95dB within 1 meter												

ITEM NO.	IMAGE REFERENCE	DESCRIPTION	QTY.	UNIT	UNIT COST	ESTIMATED DIRECT COST	MARK-UPS	IN PERCENT	TOT %	AL MARK-UPS Val UF	VAT	TOTAL INDIRECT	TOTAL COST	UNIT COST
IV.	EXECUTIVE ROOM						001	Intern				0001		
4.1		1.5 hp Basic Inverter Wall Mounted Split-type AR5500T Basic Inverter S-Inverter Digital Inverter Boost Fast Cooling Mode Triple protector plus Durafin tm Quiet mode Single user mode R32 Refrigerant 1 year warranty on parts and labor, 10 years on comp.	1.00	set			12%	12%	24%					
4.2		Split-type installation and piping works Inclusive of wires, pipes, insulations and other material requirements and consumables. Installation of outdoor unit complete with steel brackets as per manufacturer's standards. 1 year warranty on labor and instalaltion	1.00	set			12%	12%	24%					
4.3		32 inch, HD Ready, Smart TV 46.54cmH x 73.74cmL x 15.05cmW LED Display Panel Connect share movie Clean view, Game mode basic Digital TV ISDB-T Motion Rate: 60 1 year warranty	1.00	set			12%	12%	24%					
V.	BATHROOM	1				1			1					1
5.1		Single point water heater with shower head 3.5kW Power control 3-way Anti-bacterial shower plate Single water mesh filter for easy maintenance Built-in ELCB Thermal cut-out water sensor Flow valve sensor heater automatically switches "off" when there's no water supply 1 year warranty	1.00	set			12%	12%	24%					
VI.	GENERAL													
6.1	Parmine Contractions Contractions	SH28455911 Noise level at 87dB at a distance of 1m Noise level at 84dB at a distance of 40m Battery life up to 10 years, 3V Lithium Sends an automatic alarm every 40 seconds when the battery is low	5.00	sets			12%	12%	24%					
		TOTAL COST:				#REF!						#REF!	#REF!	

NOTES:

The above mentioned costing are inclusive of delivery cost from shop or warehouse to project site.
 The above mentioned costing are inclusive of assembly and labor cost at site.

3.0 All equipment and appliances are to be turnovered and subject to inspection prior to acceptance; in the event of damages and unacceptable quality, the owner has the right to demand a replacement for the said units.

4.0 The contractor shall turnover any warranty certificate and manual for the delivered equipment and appliances to the end user.

Submitted by:

ITEM		DESCRIPTION	QTY.	UNIT	LINIT COST	ESTIMATED	MARK-UPS IN PERCENT		TOTAL MARK-UPS		VAT	TOTAL INDIRECT	TOTAL COST	
NO.	IMAGE REFERENCE	DESCRIPTION			01111 0031	DIRECT COST	OCM	PROFIT	%	VALUE	7 10	COST	TOTAL COST	0111 0031
													· · · · · · · · · · · · · · · · · · ·	·

Privatization and Management Office

PROJECT TITLE : LT300 Unit 18N Condominium Unit Renovation

PROJECT Unit 18N, Legaspi Tower 300, 2600 Ocampo St., Malate, Manila, 1004 Metro Manila

SUBJECT: Furniture and Fixtures Bid Form

CONTRACTOR :

DATE:

ITEM	IMAGE REFERENCE	IMAGE REFERENCE DESCRIPTION QTY. UNIT UNIT COST ESTIMATED		ESTIMATED	MARK-UPS IN PERCENT TOTAL MARK-UPS			VAT TOTAL INDIRECT		TOTAL COST	UNIT COST			
NO.						DIRECT COST	OCM	PROFIT	%	VALUE		COST	TOTAL COOT	
I.	DORMITORY ROOM						1	1		1		1		1
1.1	Protection of the second secon	Overall dimensions: L199.5 x W99 x H159cm Mattress Size: 36" x 75" Headboard and footboard: 50mm dia. round metal tube post with 25mm and 16mm diameter round metal tube in black powder coated finish frames and supports. Side Rail: 25mm x 50mm x 1.0mm thick rectangular metal tube black powder coated finish. Bed Base: 25mm x 25mm x 1.0mm thick rectangular metal tube mesh frame with 3.8mm diameter solid wire mesh in black powder coated finish. Net weight: 36.6 kgs	3.00	sets			12%	12%	24%					
1.2		Overall Dimensions: Single 3" x 36" x 75" Polyurethane foam with a density of 31 kg/cu.m. Comes with 80 gsm brushed poly cotton cover with flex foam print 10 year warranty against sagging and production defects	6.00	pcs			12%	12%	24%					
1.3		Overall Dimensions: W48 x D47 x H180cm Color: Walnut (7007-11) 15mm thick particle board laminated with amino paper veneer with 3mm thick MDF back board and 16 inches metal drawer guide 19mm diameter steel tube hanger rod in powder coated 128mm plastic handle Net weight: 36.5 kgs	6.00	pcs			12%	12%	24%					
1.4		Overall dimensions: W39.5 x D32 x H50cm Color: Walnut with Black powder coated metal 15mm thick E2 grade particle board laminated with paper veneer with 3mm thick MDF backboard Metal mesh door in 20x10mm hole size and 20 x 20 x 0.7mm thick metal leg in powder coated finish Net weight: 9 kgs	3.00	pcs			12%	12%	24%					
1.5	29.1°	Overall dimensions: W74 x D48 x H146.5cm Desktop height: 76cm Color: Shelf panels - Dark walnut (6515) and metal members - powder coated black 15mm thick particle board laminated with PVC vinyl shelf panels. 30 x 20 x 0.6mm thick rectangular metal tube in powder coated finish frames Normal drawer side mechanism Net weight: 17 kgs	3.00	pcs			12%	12%	24%					

1.6	HB3cm HB3cm UNING AND DINING ABEA	Overall dimension: W46.5 x D50.5 x H83cm Seat Height: 44cm Material: Plastic: White (90290) or Black (3010) Wood: Natural Polyprophelene (Pp) plastic seat and backrest in injection molding process 45mm diameter tapered beechwood legs in natural finish with 10mm diameter solid iron leg support in powder Net weight: 3.7 kgs	3.00	pcs			12%	12%	24%			
	LIVING AND DINING AREA		1	1	1	1						I
2.1	H75cm USCrm D20cm	Overall dimensions: Close - W150 x D90 x H75cm Overall dimensions: Open - W195 x D90 x H75cm Walnut 18mm thick E2 grade MDF board laminated with walnut veneer 60 x 60 x 730mm solid rubber wood leg in AC lacquered finish Net weight: 43 kgs	1.00	рс			12%	12%	24%			
2.2	דיו	Overall dimensions: 36.5cm W x 40cm D x 91cm H Seat Height: 46.8cm Wood: Walnut Fabric: Light Grey 52mm thick new foam covered with polyester fabric seat and AC rubberwood frame and legs Net weight: 10.4 kgs	7.00	sets			12%	12%	24%			
1.1		Overall dimensions: W68 x D32 x H100cm Color: Brown (PA14) Carcass: 16mm thick particle board laminated with paper veneer Door: 16mm x 50mm MDF board as frame with 5mm thick slats décor laminated with paper veneer Handle: 96mm x 12mm PVC plastic Net weight: 22 kgs	1.00	set			12%	12%	24%			
	EXECUTIVE ROOM				1							
3.1		Overall size: 1275mmW x 1965mmD x 815mmH Mattress Size: 48" x 75" Color: Dark Capuccino Primary Material: Rubberwood and MDF with Veneer	1.00	sets			12%	12%	24%			
3.2		Overall Dimensions: Single 6" x 48" x 75" Polyurethane foam with a density of 31 kg/cu.m. Comes with 80 gsm brushed poly cotton cover with flex foam print 10 year warranty against sagging and production defects	1.00	pcs			12%	12%	24%			
3.3		Overall dimensions: W100 x D48 x H75cm Panels: Walnut (G188) and Black Combination Metal frame: Black 15mm thick particle board laminated with melamine, desktop and storage panels Full extension drawer slide mechanism 20 x 20 x 0.8mm thick square metal tube in powder coating finish frames Net weight: 18.2 kgs	1.00	рс			12%	12%	24%			

	3.4		Overall dimension: W48.5 x D53.5 x H83cm Seat Height: 45.5cm Material: Plastic and seat cushion: Light grey Wood: Natural Polyprophelene (Pp) plastic seat and backrest in injection molding process 25mm newfoam covered with PU faux leather fabric fixed seat cushion 38 x 60mm tapered beechwood leg in natural finish Net weight: 4.7 kgs	1.00	рс		12%	12%	24%			
	3.5		Overall dimension: W119cm x D40cm x H77cm Color: Light Wenge (VC-1C046) Material: 15mm thick particle board laminated with amino paper veneer with 3mm thick MDF back board and 14 inches metal drawer guide 39 kgs. Assembly required	1.00	рс		12%	12%	24%			
	3.6		Overall dimension: W80cm x D47cm x H190cm Color: Light Wenge (VC-1C046) Material: 15mm thick particle board laminated with amino paper veneer with 3mm thick MDF back board and 16 inches metal drawer guide and 1 piece normal lock 790 x 290mm normal mirror 19mm diameter steel tube hanger rod in powder coated 128mm plastic handle 62 kgs.	1.00	рс		12%	12%	24%			
	IV.	KITCHEN										
	4.1 V		Overall dimensions: W900mm x D330mm x H720mm Panels: Melamine	1.00	pc		12%	12%	24%			
-	۷.										[
	5.1		PS Frame,2mm flat mirror, MDF board backing, hangers, corner protectors, shrinking wrap, master carton	1.00	рс		12%	12%	24%			
	5.2		Stainless steel towel rack with extra bar or equivalent	1.00	рс		12%	12%	24%			

5.3	Ċ	Stainless steel tissue roll holder wall mounted or equivalent	1.00	рс			12%	12%	24%					
VI.	OTHERS				1	1				1	1	1		
6.1		Korean combination blinds (clear and blackout) 100% polyester material complete with necessary hardware and accessories with 1 month warranty	65.00	sq.ft.			12%	12%	24%					
		TOTAL COST:				P -						P -	P -	

NOTES:

1.0 The above mentioned costing are inclusive of delivery cost from shop or warehouse to project site.

2.0 The above mentioned costing are inclusive of assembly and labor cost at site. 3.0 All furniture are to be turnovered and subject to inspection prior to acceptance; in the event of damages and unacceptable quality, the owner has the right to demand a replacement for the said furniture and fixtures.

Submitted by:

PROJECT	:	LT300 UNIT 18N CONDOMINIUM UNIT RENOVATION
PROJECT LOCATION	:	Unit 18N, LT300, 2600 Roxas Blvd. corner P. Ocampo Street, Malate,
		Manila, 1004 Metro Manila
SUBJECT	:	GENERAL REQUIREMENT

- 1. The contractor shall be issued with the building guidelines by the owner for reference prior and during the project renovation.
- 2. The contractor shall coordinate with the building administration upon award of the project to verify and confirm building administration rules and guidelines for consideration before renovation.
- 3. The contractor shall coordinate and comply with the building administration regarding special work guidelines and requirements in consideration with the present pandemic.
- 4. The acquisition of necessary permits, licenses and clearances required for the renovation shall be by the contractor.
- 5. The cash bond requirement by the homeowners association shall be cared of the contractor.
- 6. Any penalties incurred with the cash bond caused by the contractor or his team shall be charged to the contractor.
- 7. The contractor shall closely coordinate with the administration for compliance with the building rules and guidelines.
- 8. The contractor shall coordinate with the client and consultant regarding material approval and or concerns regarding the design that will affect the project.
- 9. The contractor shall always be present in the project in the event of meetings and ocular inspections by the client and/ or consultant. In the event of the contractor's absence, he/ she must employ a technical engineer to attend and assist the client and/ or consultant during the said meetings and inspections.
- 10. The contractor shall submit at least 2 material proposals for approval for every item required for the project by the client or the consultant.
- 11. The contractor shall coordinate with the client and consultant any concerns pertaining to the design.
- 12. The contractor shall conduct necessary testing required for the project (e.g. flood testing for waterproofing, meagre testing for electrical wirings, etc.) and shall document all tests and submit certification that the project test results are acceptable based on building standards.
- 13. The contractor shall coordinate with the building administrators, owner's representative and consultant prior to testing and request for witnessing of the tests.
- 14. The contractor shall demolish and dismantle all necessary existing items as per the demolition plan and architectural specifications, some items but not limited to are stated below:
 - a. All existing CHB walls subject for demolition. Verify demolition plan for reference.
 - b. All existing wall tiles inside the toilet and bath are subject for dismantling.
 - c. All toilet and bath fixtures are subject for dismantling.
 - d. All kitchen cabinets and fixtures are subject for dismantling.
 - e. All electrical materials that are not subject for reuse are subject for dismantling.
 - f. Existing floor tiles at balcony area subject for dismantling.
 - g. Existing wall tiles at balcony zocallo subject for dismantling.
 - h. Existing combination window and sliding door subject for dismantling.
 - i. Existing ducting works subject for dismantling.
- 15. The contractor shall demolish, dismantle and repair all necessary affected items required to conduct roughing-ins to neighboring units.
- 16. The contractor to coordinate with the client regarding hauling and disposal of debris and dismantled items.

- 17. The contractor shall comply with necessary building codes in relation with the construction of necessary building materials.
- 18. The contractor shall comply with necessary building codes in relation with installation and testing of utility systems and components required by the project.
- 19. The contractor to compile all material warranties and issue to the client upon completion of the renovation.
- 20. All subcontract warranties (e.g. waterproofing warranty) shall be directly addressed and accredited to the end user.
- 21. The contractor shall employ a professional cleaning company to conduct a housekeeping for the project prior to turnover.
- 22. The contractor shall submit as-built plans based on required quantity by the owner and consultant.
- 23. The contractor shall supply, deliver and install all necessary furniture and fixture as per specifications.
- 24. The contractor shall supply, deliver and install all necessary equipment and appliances as per specifications.

Prepared by:

Benjamin Cayabyab, uap Project Specialist
I. DETAILED SPECIFICATIONS

SECTION 1 : DEFINITION OF TERMS

- 1.1 **CONTRACTOR** shall mean the person, company or firm whose proposal has been accepted by the Owner and includes is personally authorized representative, successors or permitted assignees. He is responsible to the Owner thru the Project Manager and Construction Manager.
- 1.2 **SUB-CONTRACTOR or SUPPLIER** shall mean any person, firm or corporation entering into agreement with the Contractor for the performance of the Contractor's obligation or any part thereof under the Contract. He is responsible to the Owner thru the Project Manager.
- 1.3 **CONTRACT** shall mean the written agreement entered into by the Owner and the Contractor for the performance of work shown on the drawings and as described in the Specification, including the information for Bidders, the Proposal and all bid documents issued by the Owner prior to the opening of bids.
- 1.4 **SPECIFICATION** shall mean written or printed description of work to be done describing qualities of materials and mode of construction.
- 1.5 **DRAWINGS** shall mean the drawings issued together with the Specification to prospective bidders, showing the location, characteristics, extent, form and details of the work to be done under the Contract.
- 1.6 **APPROVED** means approval in writing including subsequent written information of previous verbal approval. "Approval" shall also mean the same thing abovementioned.

SECTION 2 : DRAWINGS AND SPECIFICATION

- 2.1 It is the intent of the specification and drawings that all materials, labor, tools, equipment and plant and services, supervision, which are required to dully complete the work as shown and specified therein are to be done so by the Contractor.
- 2.2 The Drawings and Specification are meant to be complementary to each other and what is called for by one shall be called for by both.

Any apparent conflict between the Drawings and Specification and any controversial or unclear points in either shall in writing to Architect. Failure of the contractor to inform the architect within fifteen (15) calendar days after the award of contract, the final decision of the architect is executory for implementation. The contractor shall report ring during construction. At the completion of the work, said copy of the plans shall be submitted to the owner for its copy and file. 3.1 The Contractor shall establish stakes, marking lines and elevation required for construction work, referred from reference points and elevation pointed out by Engineer/Architect. The contractor shall be responsible for maintaining the correct alignment and position of these stakes as required by the Engineer throughout the life of the Contract. The Contractor shall use surveyor's transit in determining all control lines and elevation required for the construction work.

SECTION 4 : MATERIALS AND EQUIPMENT INCORPORATED IN THE WORK

- 4.1 All materials and equipment to be incorporated in the work shall be new, of current manufacture and conforming to the requirements of the drawings and the specification. The Project Manager may require the contractor to its manufacturer of materials to make actual testing of samples prior to installation. For all approved materials, the contractor shall submit a warranty certificate to the owner during, on or before the turnover of the project.
- 4.2 Mere inspection, acceptance and certification for payment of any equipment or materials as part of the work which are found defective, non-complying after inspection does not release the contractor from the responsibility of replacing or repairing it at his own expense.

SECTION 5 : CONTRACTOR'S RESPONSIBILITY OF THE CONTRACT WORK

- 5.1 The Contractor shall be responsible for the complete work or portion thereof until that it is wholly turned over and accepted by the Owner through the Project Manager or Construction Manager. He shall repair or restore and rebuild at his expense any damage thereto due to faults and action of elements, or other causes except damages due to enforceable or cataclysmic natural phenomena.
- 5.2 For accidents:
 - 5.2.1 The contractor shall bear all losses or damages from accidents, which may occur to a person or persons on account of the prosecutors of work until possession is taken over by the Owner.
 - 5.2.2 The contractor shall hold himself of solely responsible for all liabilities under the existing compensation laws regarding injuries and/or death of workmen connected with this work.

SECTION 6 : LAWS, RULES AND REGULATIONION

6.1 The Contractor shall comply with all national and local laws, rules and regulations regarding the health and safety or workmen, wages, labor codes, tax laws, buildings and construction rules and regulation and shall save the Owner, Architects, Engineers and The Project Manager or CM harmless in anyO third party claims and liabilities resulting from Contractor's noncompliance therewith.

SECTION 7: PERMITS AND LICENSES

7.1 The Contractor at his expense shall obtain all necessary permits, clerances, licenses, charges, taxes, and fees for the lawful prosecution of the contract.

SECTION 8 : CONTRACT TIME

8.1 The work to be done under this Contract shall consist of furnishing of all labor, materials (except those furnished by the Owner or by Others) equipment, supervision, facilities and performing all other related works necessary for the complete construction within the time specified in the Proposed Time Schedule attached in strict compliance with the contract drawings, specification and other related documents. The Bidders shall examine the site, drawings, specification schedules and all instruct. Failure to do so will be at the Bidder's that is aware of any concurs with all of the requirements or conditionincorporated in the invitation to bid.

SECTION 9 : PROGRESS SCHEDULES

9.1 The Contractor shall submit progress schedules showing the order of his proposed work sequences complete with the dates within which such work sequences will be started and completed. Such schedules shall be submitted within seven (7) calendar days after the receipt of Notice To Award/To Proceed and subject to the approval of the Construction Manager and Owner. The contractor shall also submit their S-curve, Critical Path Method (CPM), and Bar chart for the project.

SECTION 10 :SANITARY PROVISION AND FIRE PROTECTION

- 10.1 The Contractor shall provide, as many portable fire extinguishers deemed necessary while performing the work.
- 10.2 The Contractor shall take extra care in the storage of flammable materials.
- 10.3 There shall be no smoking, cooking or eating allowed at the site premises during and after work. Eating, and smoking shall only be allowed at a designated area, and the contractor shall be responsible for proper clean up thereafter.

SECTION 11: AUTHORITY OF THE PROJECT MANAGER/ CONSTRUCTION MANAGER

11.1 The Project Manager/Construction Manager shall decide on any and all quest, which may arise as to the quality and acceptability of materials furnished and work performed and as to the manner of performance and rate of progress of work, and shall decide on all , which may arise as to the acceptable fulfillment of the terms of the Contract.

SECTION 12 : ADJUSTMENTS OF DISPUTES

12.1 Claims for adjustments of disputes must be made and submitted in writing by the Contractor within ten (10) days after the date of issue of the order dealing therewith and any disagreement with the interpretation of the plans and/or the Specification, made by the Engineer/Architect, must likewise be asserted and submitted in writing by the Contractor within ten (10) days from the date of such interpretation.

SECTION 13 : INSPECTION

13.1 The Project Manager/Construction Manager shall be allowed access to all parts of the work at all times and shall be furnished such information and assistance by the contractor as may be required to make a complete and detailed inspection.

SECTION 14 : REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK

- 14.1 Any defective work whether the result of poor workmanship of defective materials, damages through carelessness, or of other cause, found to exist prior to acceptance of or final payment for the work, shall be removed immediately, replaced by work and materials conforming to the Specification, or shall be remedied otherwise in an acceptable manner.
- 14.2 Work done contrary to or regardless of the instruct of the Project Manager or C.M. work done beyond the lines shown on the plans or as given, except as therein provided, or extra work correction work done without authority will be considered as unauthorized and will not be paid for. All correction work of any description and removal and replacement of unsatisfactory materials shall be done at the contractor's expense.

SECTION 15 : FINAL INSPECTION

15.1 Upon due notice from the Contractor of presumptive completion of the entire project, the Project Manager or Construction Manager shall make a semi-final inspection, and if all construction contemplated by the contract is found completed to his satisfaction, such inspection shall constitute final acceptance and the contractor shall be notified of such acceptance in writing ten (10) days or as soon as thereafter as practicable.

15.2 If, however, at any semi-final inspection, any work in whole or in part is found unsatisfactory, the Project Manager or Construction Manager shall give the contractor instruction which he shall forthwith comply with and execute. Another inspection shall be made which shall constitute the final inspection if the work has been found complete & satisfactorily implemented.

SECTION 16 : SUPERINTENDENCE AND SUPERVISION

16.1 The Contractor shall assign a competent Project Engineer and necessary assistants such as Architectural Draftsman, Engineers and Safety Engineer, satisfactory to the Construction Manager and Project Technical Group. The Superintendent shall represent the Contractor at his absence and all direct given to him by the construction shall be as binding as if given to the Contractor.

SECTION 17 : AS-BUILT DRAWINGS

17.1 The Contractor shall maintain at the jobsite two sets of full sized contract drawings showing any deviation which have been made from the contract drawings, including buried or concealed construction and utility features which are revealed during the course of construction special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the contract drawings. These drawings shall be available for review by the Project Manager/Construction Manager (CM) at all times. Upon completion of the work the marked 5 sets of prints and one set of reproducible as-built drawings on Mylar or sepia prints shall be delivered to the Project Manager. Requests for partial payments will not be approved if the marked prints are delivered to the Project Manager/Construction Manager.

SECTION 18 : UAP DOCUMENT 301 / OTHER CONDITION

- 18.1 All applicable articles and clauses of the general condition, which are not in conflict with the condition herein stated, shall form part of this document.
- 18.2 OTHER CONDITION
 - 18.2.1 Coordinate with the Architect thru the construction manager for any discrepancies found in all drawings and specification before execution of work.
 - 18.2.2 Coordinate with other trades to avoid conflict prior for final implementation of work.
 - 18.2.3 Other materials not mentioned in all construction documents (drawings and specification) but are necessary for the proper completion of the work must be furnished and executed by the contractor without entailing any additional cost involved.

18.2.4 Verify actual condition and dimensions in the field of work and fit detail accordingly. Submit shop drawings for Architects final approval prior for final execution and implementation of the work.

SAFETY, SANITATION AND SECURITY REQUIREMENTS

SECTION 1 : CONTRACTOR'S ACCIDENT PREVENTION PLAN FORMAT

- 1.1 The following guidance is provided for the preparation of contractor accident prevention plans. The accident prevention plan needs to address the following:
- A. Administrative Section
 - Administrative responsibilities for affecting the Accident Prevention Plan. (Identification and accountability of Contractor's Safety Engineer Responsible for accident prevention and enforcement of condition stipulated in this section).
 - 2. Local requirements, if any, which must be complied with: i.e., noise control, traffic problems, etc.
 - 3. Method the general contractor proposes to control and coordinate work of his Subcontractors.
 - 4. Plans for layout of temporary construction buildings and facilities, including how Contractor plans to control those of Subcontractors.
 - 5. Plans for initial indoctrination, continued safety education, and training for the Contractor's employees.
 - 6. Plans for traffic control and marking of hazards to cover haul roads, street intersect, utilities, restricted areas, etc.
 - 7. Plans for maintaining continued job cleanup, safe access and egress.
 - 8. Plans for fire protection and dealing with emergencies (ambulance service, fires, etc.).
 - 9. Plans for inspection of the jobsite by competent persons including reports to be kept, inspection reports, and corrective act taken.
 - 10. Procedures to be used for accident investigation.
 - 11. Details of fall protection systems
 - 12. Procedure for security of site, personnel and materials.
- B. Accident Reporting
 - 1. All accidents which occur shall be investigated and reported in accordance with requirements of agency having jurisdiction.
- C. Prohibit
 - 1. Smoking shall not be allowed within work and storage premises.
 - 2. Drinking of liquor of any kind shall not be allowed within the site.
 - 3. Gambling of any type is strictly prohibited within the site.
 - 4. Carrying of firearms, knives, blades, and other such instruments is strictly prohibited within the site.

SECTION 2 : SANITATION

- 2.1 Water
 - 1. Adequate supply of potable drinking water shall be supplied to workers.
 - 2. Drinking water shall be dispensed by means which prevents contamination.
- 2.2 Toilets
 - 1. Toilets shall be so construed that the occupants shall be protected against weather and falling objects.
 - 2. Adequate ventilation and lighting shall be provided and all windows and vents screened.
 - Provision for routinely servicing and cleaning all toilets and disposing of the sewage shall be established before placing toilet facilities into operation. The method of sewage disposal and location selected shall be in accordance with local health regulation.
- 2.3 Washing Facilities
 - 1. Washing facilities shall be provided to maintain healthful and sanitary condition.
 - 2. Each washing facility shall be maintained in a sanitary condition.
- 2.4 Food Service
 - 1. Mess facilities shall be operated and maintained in compliance with the health and sanitation authority.
 - 2. An adequate number of sturdy waste receptacles shall be provided in the food service area. They shall be emptied at least daily and maintained in a sanitary condition. They shall be provided with solid tight fitting covers and plastic bag garbage liner.
 - 3. All food service operation shall be carried out in a sanitary manner, kept uncontaminated throughout the storage, preparation, and serving process.
 - 4. Workers shall not be allowed to eat within the project work area.Contractor shall provide a separate area for eating facilities.
- 2.5 Mosquito and Pest Control
 - Regular mosquito fogging, fumigation and extermination of cockroaches, flies and rodents for workers sleeping quarters and work area shall be conducted once a month during the construction duration.

SECTION 3 : MEDICAL AND FIRST AID REQUIREMENTS

- 3.1 General
 - Prior to start of work, arrangements shall be made for medical facilities, ambulance service and medical personnel to be available for prompt attention to the injured and consultation on occupational health.

- 2. Communication and transportation to effectively care for injured workers shall be provided. A properly equipped emergency first aid unit shall be provided during work hours at site.
- 3. Identification and directional markers shall be provided to readily denote location of first aid stat.
- 4. When persons are expose to epoxy resins, hydrocarbons, solvents, cement, lime or other dermatitis- producing substances, ointment recommended by the manufacturer for the specific exposure shall be available.
- 5. First aid station shall be in accordance with the recommendation of a licensed physician.
- 6. The contents of first aid kits shall be checked by Contractor at least weekly when work is in progress to insure that expended items are replaced.
- 7. A qualified first aid attendant shall be on duty in the station at all hours when work is in progress.

SECTION 4 : PERSONAL PROTECTION APPAREL AND SAFETY EQUIPMENT

- 4.1 General
 - 1. Personal protective devices shall be used as required.
 - 2. Hard-hats and shoes shall be worn by all persons who are engaged in work.
 - 3. Welding operation shall require goggles, face masks, shields, or helmets, suitable to the type of work.
 - 4. Drop lines, lanyards and lifelines independently attached or attended, shall be used when performing such work on hazardous areas or other unguarded location.
 - 5. Uniform: All works shall wear T-shirts, color coded and marked by company name per trade. All workers shall wear I.D.
 - 6. Masks and suitable clothing shall be sworn by persons, engaged in work using toxic or harmful substances or producing irritants such as dust or fumes. Gloves shall be provided to workers whose nature of work calls for such protection.

4.2 Protective Headgear

1.1 All persons working on or visiting non-administrative activities (i.e., construction, operation, and maintenance) shall be provided with and required to wear protective headgear.

SECTION 5 : LIGHTING

- 5.1 General
 - 5.1.1 Construction site offices, stairways, passageways, construction roads and working areas shall be lighted while work is in progress by at least the following minimum light intensities:

LIGHTING INTENSITY

FACILITY NAME OF FUNCTION			FOOT-CANDLES	
Accessway	vs – General Indoor	-	5	
Accessway	vs – General Outdoor	-	3	
Administra	ative Areas (Offices, Conference Rooms)	-	50	
Constructi	on Areas			
-	Indoor – General	-	10	
-	Outdoor – General	-	3	
-	Concrete Placement Operation	-	10	
-	Excavation and Fill Areas	-	5	
Exitways, V	Walkways, Ladders, Stairways	-	10	
Mechanica	al and Electrical Equipment Rooms	-	10	
First Aid St	at	-	30	
Toilets and	d Wash Rooms	-	10	
General Underground Work Areas -				

5.1.1 All stairways, floor openings, pits, shafts, excavation, etc. into which people can accidentally fall shall be adequately lighted. Lighting shall be connected to emergency genset. All stairs within the basement construction shall be provided with emergency lights of nickel cadmium rechargeable battery type.

SECTION 6 : MATERIAL HANDLING, STORAGE AND DISPOSAL

- 6.1 General
 - 6.1.1 All material in bags, containers, bundles, or stored in tiers with loading to be confined within the structure design shall be stacked, limited in height so that it is stable and secured against sliding or collapse.
 - 6.1.2 Access ways shall be kept clear.
 - 6.1.3 Flammable and combustible liquids in a storage building shall be in a NO SMOKING area and separated from combustible construction.

- 6.1.4 Unauthorized persons shall be prohibited from entering storage areas. All persons shall be in a safe position while materials are being loaded or unloaded.
- 6.1.5 Materials will not be moved over or suspended above personnel unless positive precautions have been taken to protect the personnel from falling objects.
- 6.1.6 Persons shall not work or pass under elevation work areas unless protected by overhead protection.
- 6.1.7 Where the movement of materials may be hazardous to persons, taglines or other devices shall be used to control the loads being handled by hoisting equipment. They shall be nonconductive when used near energized lines.

6.2 Lumber

- 6.2.1 Lumber shall be stacked to be stable and self-supporting in dry areas.
- 6.2.2 Reusable lumber shall have all nails withdrawn before it is stacked for storage.
- 6.3 Floor, Walls and Partition Blocks
 - 6.3.1 Blocks shall be stacked in tiers on solid, level surfaces.
 - 6.3.2 When masonry blocks are stacked higher than 6 feet, the stack shall be tapered back one-half block per tier above the 6-foot level.
- 6.4 Reinforcing, Sheet and Structural Steel
 - 6.4.1 Reinforcing steel shall be stored in orderly piles away from walkways and roadways.
 - 6.4.2 Structural steel shall be securely piled to prevent members sliding off or the pile toppling over.
- 6.5 Cylindrical Material
 - 6.5.1 Structural steel, poles, pipe, bar stock, and other cylindrical materials, unless racked shall be stacked and blocked so as to prevent spreading or tilting.
- 6.6 Sand, Gravel and Crush Stone Operation
 - 6.6.1 Standards for the safe sloping and control of pit walls shall be established and followed by the operation.
 - 6.6.2 Loose, unconsolidated material shall be stripped for a safety distance (at least IO feet) from the top of pit or quarry walls, and shall be sloped to the angle of repose.
 - 6.6.3 Persons shall not work near or under dangerous banks.Overhanging banks shall be removed and unsafe ground condition shall be corrected, or the areas shall be barricaded and posted.

6.6.4 Baffle boards, screens, cribbing, or other suitable barriers should be provided where movement of material into cuts constitutes a safety hazard.

6.7 Housekeeping

- 6.7.1 All stairways, passageways, gangways, and access ways shall be kept free of materials, supplies and obstruct at all times.
- 6.7.2 Loose or light material shall not be stored or left on floors that are not closed in, unless it is safely secured.
- 6.7.3 Tools, materials, extension cords, hose, or debris shall not cause tripping or other hazard.
- 6.7.4 Tools, materials, and equipment subject to displacement or falling shall be adequately secured.
- 6.7.5 Empty bags having contained lime, cement, and other dustproducing material shall be removed periodically as specified by the designated authority.
- 6.7.6 Protruding nails in scrap boards, planks and timbers shall be removed, hammered in, or bent over flush with the wood unless placed in containers or trucks for removal.
- 6.7.7 Walkways, runways and sideways shall be kept clear of excavation material or other obstruct and no sideways shall be undermined unless shored to carry a minimum live load of one hundred and twenty-five (I25) pounds per square foot (6I0.3 kg/sm).
- 6.7.8 Form and scrap lumber and debris shall be cleared from work areas, passageways and stairs in and around building storage yards and other structures.
- 6.7.9 All storage and construction sites shall be kept free from the accumulation of combustible materials. Regular procedure shall be established for cleanup of the area as specified by the designated authority.
- 6.7.10 Rubbish or combustible material shall be kept from areas where flammable and combustible liquids are stored, handled, or processed.
- 6.7.11 Accumulation of flammable and combustible liquids on floors, walls, etc. is prohibited. All spills of flammable and combustible liquids shall be cleaned up immediately.
- 6.7.12 Contractors shall provide sufficient personnel and equipment to insure compliance with all housekeeping requirements.
- 6.7.13 Contractors will inspect the work area daily for adequate housekeeping and record unsatisfactory findings on the daily inspection report.
- 6.8 Waste Material Disposal
 - 6.8.1 Scrap lumber shall be placed in piles or waste material and rubbish shall be placed in containers.

- 6.8.2 Chutes for debris shall be enclosed except for openings equipped with closures at or about floor level for the insertion of materials. Openings shall not exceed 48 inches (I.22m) in height measured along the wall of the chute. Openings at all stories below the top floor shall be kept closed when not in use.
- 6.8.3 Whenever materials are dropped to any point lying outside the exterior walls of the building, an enclosed chute shall be used.
- 6.8.4 When debris that cannot be handled by chutes is dropped, the area onto which the material is dropped shall be enclosed with barricades not less than 42 inches (I.07m) high and not less than 6 feet (I.83m) back from the projected edge of the opening above. Signs warning of the hazard of falling material shall be posted at each level.

SECTION 7 : FIRE PREVENTION

- 7.1 Fire Protection
 - 7.1.1 Recommendation of NFPA shall be complied within situat not covered in this Section. Where local building codes are established, the most stringent requirements shall apply.
 - 7.1.2 Fires and open flame devices shall not be left unattended.
 - 7.1.3 Smoking shall be prohibited in all areas where flammable combustible, or similar hazardous materials are stored, except in those location specifically designated by the authorities. NO SMOKING signs will be posted in all prohibited areas.
- 7.2 Flammable and Combustible Materials
 - 7.2.1 All storage, handling, or use of flammable and combustible materials shall be under the supervision of qualified persons.
 - 7.2.2 Electrical lighting shall be the only means used for artificial illumination in areas where flammable materials are present. All electrical equipment and installation shall be in accordance with the National Electrical Code for hazardous location.

SECTION 8 : FIRE PROTECTION

- 8.1 First Aid Fire Protection
 - 8.1.1 Portable fire extinguishers shall be provided where needed and inspected and maintained in accordance with local Fire Department.
 - 8.1.2 Fire extinguishers shall be suitably placed, distinctly marked, readily accessible, and maintained in a fully charged and operable condition. In accordance with National Fire Protection Association Standard No.IO.
 - 8.1.3 Fire barrels and buckets shall be painted red, marked"For Fire Only". Barrels shall be kept filled at all times.

8.2 Water Supply and Distribution

- 8.2.1 Water supply and distribution facilities for fire fighting shall be provided and maintained in accordance with recommendation of National Fire Protection Association.
- 8.2.2 Vehicles, equipment, materials, and supplies shall not be placed so that access to fire hydrants and other fire fighting equipment is obstructed.

8.3 Miscellaneous

- 8.3.1 When outside help is relied upon for fire protection, a written arrangement shall be made. Standpipe and hydrant connect must be compatible with the equipment of the local fire department.
- 8.3.2 Emergency Fire, Police and Hospital telephone numbers and reporting instruct shall be conspicuously posted.

SECTION 9 : ROPES, SLINGS, CHAINS AND HOOKS

- 9.1 General
 - 9.1.1 The use of ropes, slings, and chains shall be in accordance with the safe recommendation of their manufacturer and equipment manufacturer. Rigging equipment shall not be loaded in excess of its recommended safe working load as prescribed in latest edition of ANSI B 30.9, Appendix C, and the table in 17.F.Ol.
 - 9.1.2 All hooks used to support human loads or loads that pass over personnel shall be closed.
 - 9.1.3 The use of open hooks is prohibited in rigging to lift any load where there is danger of relieving the tension on the hook due to the load or hook catching or fouling.
 - 9.1.4 All equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to insure that it is safe. Defective equipment shall be removed from service.

SECTION 10 : MACHINERY AND MECHANIZED EQUIPMENT

- 10.1 General
 - 10.1.1 Contractor shall designate a competent person to be responsible for the inspection of all machinery and equipment daily and during use to make sure it is in safe operation condition. Tests shall be made at the beginning of each shift during which the equipment is to be used to determine that the brakes and operation systems are in proper working condition.

- 10.1.2 Machinery or equipment shall not be operation in a manner that will endanger persons or property nor shall the safe operation speeds or loads be exceeded.
- 10.1.3 All mobile equipment and the area in which they are operational shall be adequately illuminated while work is in progress.

SECTION 11 : RAMPS. RUNWAYS, PLATFORMS, SCAFFOLDS AND TOWERS

- 11.1 General
 - 11.1.1 Load-bearing structures shall be designed, constructed and maintained in accordance with safety standards and requirement specifically approved by the designated authority. If these structures, including such accessories as braces, brackets, trusses, screw legs and ladders, are damaged or weakened from any cause they shall be repaired or replaced immediately.
 - 11.1.2 Planning shall be supported or braced to prevent excessive spring or deflection and secured and supported to prevent tipping or displacement.
 - 11.1.3 Employees on ramps, scaffolds, roofs, floors, or other working surfaces from which they may fall 6 feet (I.8m) or more or working over dangerous operation shall be protected by guardrails with intermediate rail and toeboard, catch platforms, temporary floors, safety nets, safety belts, or equivalent.
 - 11.1.4 Overhead protection shall be provided for area exposed to hazards from falling objects.

11.2 Standard Railing

- 11.2.1 A standard railing shall consist of top rail, intermediate rail, toe board, and posts, and shall have a vertical height of approximately 42 inches (I.07m) from upper surface of top rail to floor, platform, runaway, or ramp level. The top rail shall be smooth-surfaced throughout the length of the railing. The intermediate rail shall be halfway between the top rail and the floor, platform, runaway, or ramp. The ends of the rails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard.
- 11.2.2 Railings receiving heavy stresses from employees trucking or handling materials shall be provided additional strength by the use of heavier stock, closer spacing of posts, bracing, or by other means.
- 11.2.3 A stair railing shall be of construction similar to a standard guardrail but the vertical height shall be not more than 34 inches (86.36 cm) nor less that 30 inches (76.2 cm) from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread.

SECTION 12 : WORK IN CONFINED SPACES

- 12.1 General
 - 12.1.1 Prior to entry into confined or enclosed spaces, a positive procedure to eliminate or control the hazards shall be established.
 - 12.1.2 Enclosed spaces shall include water tanks, pits, vaults, shafts, or other confined spaces, or any place with limited ventilation.
 - 12.1.3 Hazards considered shall include toxic material and vapors, flammable materials and vapors, asphyxiation, and lack of oxygen.
 - 12.1.4 Mechanical exhaust ventilation sufficient to maintain a healthy working atmosphere shall be provided.
 - 12.1.5 Persons working in confined or enclosed spaces shall have a safety harness and life line with an attendant if the atmosphere has oxygen deficiency or contamination sufficient to require respiratory protection. The attendant shall be assigned no other duties. A signal system shall be established.

SECTION 13 : FLOOR AND WALL OPENINGS

- 13.1 General
 - 13.1.1 All floor and roof holes, such as elevation or pits, sump pits, shafts, stairs, ramps another opening into which persons can accidentally fall shall be guarded by a securely anchored railing with intermediate rail, and toe board.

TEMPORARY FACILITIES

SECTION 1 : GENERAL

- 1.1 Summary
 - 1.1.1 This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.
 - 1.1.2 Temporary utilities required include but are not limited to:
 - 1. Water service and distribution.
 - 2. Temporary electric power and light.
 - 1.1.3 Temporary construction and support facilities required include but are not limited to:
 - 1. Field offices and storage sheds.
 - 2. Temporary roads and paving.
 - 3. Sanitary facilities, including drinking water.
 - 4. Dewatering facilities and drains.
 - 5. Temporary enclosures.
 - 6. Hoists and temporary elevationor use
 - 7. Temporary Project identification signs and bulletin boards.
 - 8. Waste disposal services.
 - 9. Rodent and pest control.
 - 10. Construction aids and miscellaneous services and facilities.
 - 1.1.4 Security and protection facilities required include but are not limited to:
 - 1. Temporary fire protection.
 - 2. Barricades, warning signs, lights.
 - 3. Sidewalk bridge or enclosure fence for the site.
 - 4. Environmental protection.
- 1.2 Submittals
 - 1.2.1 Temporary Utilities: Submit a schedule indicating implementation and termination of each temporary utility within 15 days of the date established for commencement of the work.
- 1.3 Quality Assurance

- 1.3.1 Regulation: Comply with industry standards and applicable laws and regulation if authorities having jurisdiction, including but not limited to:
 - 1. Building Code requirements.
 - 2. Health and safety regulation.
 - 3. Utility company regulation.
 - 4. Police, Fire Department and Rescue Squad rules.
 - 5. Environmental protection regulation.
- 1.3.2 Standards: Comply with NFPA Code 24I, "Building Construction and Demolition Operation,"ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
 - 1. Refer to "Guidelines for Bid Condition for "Temporary Job Utilities and Services," prepared jointly by AGC and ASC, for industry recommendation.
- 1.3.3 Electrical Services: Comply with NEMA, NECA and UL standards and regulation for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
- 1.3.4 Inspect : Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certificate and permits.
- 1.4 Project Condition
 - 1.4.1 Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of the permanent service.
 - 1.4.2 Condition of Use: Keep temporary services and facilities clean and neat in appearance. Operation in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary condition, or public nuisances to develop or persist on the site.

SECTION 2 : PRODUCTS

- 2.1 Materials
 - 2.1.1 General: Provide new materials; if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.
 - 2.1.2 Lumber and Plywood: Comply with requirements as per manufacturer's standards.
 - 2.1.3 Roofing Materials: Provide pre-formed metal roofing on roofs of job built temporary offices, shops and sheds, as approved by the Project Manager.
 - 2.1.4 Paint: Comply with requirements based on manufacturer's standards.
 - 1. For job-built temporary offices, shops, sheds, fences and other exposed lumber and plywood, provide exterior grade acrylic-latex emulsion over exterior primer.
 - 2. For sign panels and applying graphics, provide exterior grade alkyd gloss enamel over exterior primer.

- 3. For interior walls of temporary offices, provide two coats interior latex flat wall paint.
- 2.1.5 Tarpaulins: Provide waterproof. Fire-resistant, UL labeled tarpaulins with flame-spread rating of I5 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retarding tarpaulins.
- 2.1.6 Water: Provide potable water approved by local health authorities.
- 2.1.7 Open-Mesh Fencing : Provide II-gauge, galvanized 50mm, chain link fabric fencing l800 mm high with galvanized barbed wire top strand and galvanized steel pipe posts, 38mm I.D. for line posts and 64mm I.D. for corner posts, when required by the Project Manager.

2.2 EQUIPMENT

- 2.2.1 General: Provide new equipment; if acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- 2.2.2 Water Hoses: Provide 200mm heavy-duty, abrasion-resistant, flexible rubber hoses 30000 mm long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.
- 2.2.3 Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.
- 2.2.4 Electrical Power Cords: Provide grounded extension cords; use "hardservice" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress
- 2.2.5 Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- 2.2.6 Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows and serviceable finishes. Provide heated and air-conditioned units on foundation adequate for normal loading.
- 2.2.7 Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar non-absorbent material.
- 2.2.8 First aid Supplies : Comply with governing regulation.
- 2.2.9 Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. In other location provide hand-carried, portable, UL-rated, class "ABC dry chemical extinguishers or a combination of extinguishers of NFPA recommended classes for the exposures.
- 2.2.10 Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

SECTION 3 : EXECUTION

- 3.1 Installation
 - 3.1.1 Use qualified personnel for installation of temporary facilities. Location facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocation and modify facilities as required.
 - 3.1.2 Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

FINAL CLEANING

SECTION 1 : GENERAL

- 1.1 Summary
 - 1.1.1 This Section specifies administrative and procedural requirements for final cleaning at Substantial Completion.
- 1.2 Environmental Requirements: Conduct cleaning and waste disposal operation in compliance with local laws and ordinances. Comply fully with federal and local environmental and anti-pollution regulation.
 - 1. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.
 - 2. Burning or burying of debris, rubbish or other waste material on the premises will not be permitted.

SECTION 2 : PRODUCTS

2.1 Cleaning Agents: Use cleaning materials and agents recommended by the manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property, or that might damage finished surfaces.

SECTION 3: EXECUTION

- 3.1 Progress Cleaning
 - 3.1.1 Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
 - 3.1.2 Do not allow the accumulation of scrap, debris, waste materials and other items not required for construction of this work.
 - 3.1.3 At least twice each week, and more often if necessary, completely removes all scrap, debris, waste material from the jobsite.
 - 3.1.4 Provide adequate storage for all items awaiting removal from the jobsite, observing all requirements for fire protection and protection of the ecology.
 - 3.1.5 Weekly, and more if necessary, inspect all arrangement of materials stored on the site; restack, tidy, or otherwise service all arrangements to meet the requirements of subparagraph "1" above.
 - 3.1.6 Weekly, and more often if necessary, sweep all areas clean, "Clean" for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and handheld broom.

- 3.1.7 As required preparatory to installation of succeeding materials, clean the structures or pertinent port thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using all equipment and materials required to achieve the required cleanliness.
- 3.1.8 Following the installation of finish floor materials, clean the finish floor daily (and more often if necessary) at all times while work is being performed in the space in which finish materials have been installed. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from all foreign material which, in the opinion of the Project Manager, may be injurious to the finish floor material.

3.2 Final Cleaning

- 3.2.1 General: Provide final cleaning operation when indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of work to the condition expected from a commercial building cleaning and maintenance program. Comply with manufacturer's instruction.
 - Comply the following cleaning operation before requesting inspection for Certification of Substantial Completion for the entire project or a portion of the project.
- 3.2.2 Complete the following cleaning operation before requesting inspection for Certification of Substantial Completion for the entire project or a portion of the project.
 - Clean the Project site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste materials, litter and foreign substances. Sweep paved areas broom clean. Remove petro-chemical spills, stains and other foreign deposits. Rake grounds that are neither planted nor paved, to a smooth even-textured surface.
 - Clean exposed exterior and interior hard-surfaced finishes to a dirtfree condition, free of stains, films and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.
 - 4. Broom clean concrete floors in unoccupied spaces.
 - 5. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - Remove labels that are not permanent labels.
 Touch-up and otherwise repair and restore marred exposed finishes and surfaces. Replace finishes and surfaces that cannot be

satisfactorily repaired or restored, or that shown evidence of repair or restoration. Do not paint over "UL" and similar labels, including mechanical and electrical name plates.

- 8. Wipe surfaces of mechanical and electrical equipment, elevation or equipment and similar equipment. Remove excess lubrication, paint and mortar droppings and other foreign substances.
- 9. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- Clean light fixtures, lamps, globes and reflectors to function with full efficiency. Replace burned out bulbs, and defective and noisy starters in fluorescent and mercury vapor fixtures.
- 11. Leave the Project clean and ready for occupancy.
- 3.2.3 Pest Control: Engage an experienced licensed exterminator to make a final inspection, and rid the Project of rodents, insects, and other pests. Comply with regulation of local authorities.
- 3.2.4 Removal of Protection: Remove temporary protection and facilities installed during construction to protect previously completed installation during the remainder of the construction period.
- 3.2.5 Compliance: Comply with governing regulation and safety standards for cleaning operation. Remove waste materials from the site and dispose of in a lawful manner.
 - Where extra materials of value remain after completion of associated construction has become the Owner's property, dispose of these materials as directed.
 - Except as otherwise specifically provided, "clean", for the purpose of this Article, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.
- 3.3 Cleaning During Owner's Occupancy
 - 3.3.1 Should the Owner requires occupancy of the work or any portion thereof prior to its completion by the Contractor and acceptance by the Owner, responsibilities for interim and final cleaning of the occupied spaces shall be as determined by the Project Manager in accordance with the General Condition of the Contract.

ARCHITECTURAL WORKS TECHNICAL SPECIFICATION

SECTION 1 : GENERAL WORKS

- 1.1 The contractor shall conduct verification of the actual site condition based on the proposed renovation plan, all discrepancies discovered herewith shall be reported and coordinated to both Architect and Owner for proper action. The said verification shall be conducted within the period between issuance of notice of award and notice to proceed.
- 1.2 The contractor shall coordinate with the building administration regarding project guidelines and requirements prior to construction/ renovation.
- 1.3 The contractor shall always maintain a clean environment for the jobsite, ready to receive inspectors such as architects, engineers, consultants, owners, etc.
- 1.4 The contractor shall submit shop drawings for all design traits especially for architectural finishes for the architect to verify methodology for design implementation. Shop drawings are subject for approval to either architect or owner prior to implementation.
- 1.5 Contractor shall submit a minimum of 2 material proposals for approval for all items subject for consideration with the renovation. Delays with the submission of items for approval and quantity of proposals shall be at the expense of the contractor.
- 1.6 Failure of material approval. In the event that the contractor installed an item or finish that was not approved by the client or consultant, the client and consultant has the right to reject and demand replacement of the said item in the expense of the contractor.
- 1.7 All furniture and fixtures, and equipment & appliances shall be installed and turnovered to the client in good and acceptable condition, including manuals and product certifications. The client has the right to reject and request for replacement for items that has damages prior to acceptance.
- 1.8 Contractor to produce and submit as-built plan of architectural and engineering drawings in consideration with the renovations made as per drawings and specifications.
- 1.9 Demolition and dismantling works:
 - 1.9.1 Contractor to demolish all walls indicated in the plan subject for demolition.
 - 1.9.2 Contractor to dismantle existing metal ducts at the said unit.
 - 1.9.3 Contractor to dismantle all wall tiles at existing toilet and bath.
 - 1.9.4 Contractor to dismantle all toilet and bath fixtures and accessories.
 - 1.9.5 Contractor to dismantle all kitchen cabinetry and kitchen fixtures.
 - 1.9.6 Contractor to dismantle existing sliding door with fixed windows at balcony.
 - 1.9.7 Contractor to dismantle existing floor tiles at balcony.
 - 1.9.8 Contractor to dismantle existing wall tiles at balcony zocallo wall interior surface.
 - 1.9.9 Contractor to dismantle all necessary items that may affect proposed plan for implementation.
 - 1.9.10 Contractor to coordinate with end user regarding dismantled items if subject for turnover or for hauling.

1.9.11 The contractor shall dismantle, demolish and repair into existing condition any neighboring unit's wall, ceiling, etc. that is required for the project's roughing-in works.

SECTION 2 : WALL WORKS

- 2.1 Contractor to construct drywall partition using 9mm thick fiber cement boards on both faces with 0.5mm thick x 75mm x 50mm metal studs on 75mm x 50mm x 0.5mm metal tracks. Metal stud and tracks framing shall be 400mm on center both ways (horizontal and vertical framing). Contractor to consider necessary consumables and accessories required for drywall construction.
- 2.3 Toilet and bath walls. Contractor to use 100mm thick concrete hollow blocks with cement plaster on designated painted face. Contractor to provide 10mm diameter reinforcement deformed steel bar for Concrete Hollow Blocks (CHB) standard installation spaced every 600mm on center, both ways.

SECTION 3 : WALL FINISHES

- 3.1 For all existing interior walls and column surfaces to be retained: contractor shall clean and plaster all damaged surfaces when necessary using skimcoat, following the manufacturer's standard, prior to application of one (1) coat flat latex paint primer and two (2) coats semi-gloss odourless latex paint. Contractor to submit paint swatches for approval.
- 3.2 New CHB cement plastered walls painting. Contractor to apply skimcoat plaster on both sides and provide necessary preparation prior to final painting as per painting manufacturer's standards; apply one (1) coat acrylic latex flat paint primer and apply two (2) coats semi-gloss odourless latex top coat paint. Contractor to submit sample swatches for approval.
- 3.3 New drywall partition subject for painting. Contractor to apply gauze at all joints, putty and sand to cover connections and surface imperfections prior to final application of one (1) coat latex flat paint primer and apply two (2) coats latex semigloss odourless top coat paint with as per painting manufacturer's specification. Contractor to submit sample swatches for approval.
- 3.4 Contractor to paint 100mm height base paint at walls from finish floor line at wall perimeters using semi-gloss latex paint as per manufacturer's standards. Contractor to submit paint swatches for approval.
- Toilet wall tiles (Lavatory and toilet area). Contractor to supply, deliver and install
 300mm x 300mm glazed ceramic tiles using tile adhesive and with antibacterial tile
 grout up to 900mm height from finish floor line, provide 10mm x 10mm square

section pvc tile trim at height termination. Contractor to paint wall surface above tile cladding using one (1) coat flat latex primer and two (2) coats semi-gloss odourless latex paint as per manufacturer's standards. Contractor to submit tile samples and tile grout swatches for approval.

- 3.6 Toilet wall tiles (Shower area). Contractor to supply, deliver and install 300mm x 300mm glazed ceramic tiles using tile adhesive and with antibacterial tile grout up to ceiling height from finish floor line. Contractor to submit tile samples and tile grout swatches for approval.
- 3.7 Exterior wall surface and balcony interior wall surface. Contractor to prepare wall surfaces as per manufacturer's standards using skim coat or approved equal. Contractor to apply two (2) coats elastomeric paint as per manufacturer's standards. Contractor to submit paint swatches for approval.

SECTION 4 : FLOOR FINISHES

- 4.1 General area. Contractor to supply, deliver and install 400mm x 400mm non-skid ceramic floor tiles using tile adhesive and anti-bacterial tile grout as per manufacturer's standards. Contractor to submit tile samples for approval.
- 4.2 Balcony area. Contractor to supply, deliver and install 400mm x 400mm non-skid ceramic floor tiles using tile adhesive and anti-bacterial tile grout as per manufacturer's standards. Contractor to submit tile samples for approval.
- 4.3 Toilet and bath area. Contractor to supply, deliver and install 300mm x 300mm nonskid ceramic floor tiles using tile adhesive and anti-bacterial tile grout as per manufacturer's standards. Contractor to submit tile samples for approval.

SECTION 5 : CEILING FINISHES

- 5.1 General ceiling works. Supply, delivery and installation of 9mm thick moisture resistant and fire retardant gypsum board with 0.5mm x 19mm x 50mm double furring channel framing spaced every 600mm on center, both ways; complete with necessary fasteners and accessories as per manufacturer's standards. Contractor to provide 12mm x 12mm Z bead PVC shadow moulding at wall and ceiling perimeter.
- 5.2 Ceiling paint finish. All ceiling and moulding shall be painted using three (3) coats flat white latex paint as per manufacturer's standards. Contractor to prepare all painting surfaces and board joints using construction standards.

SECTION 6 : LIGHTING FIXTURES

- 6.1 Contractor to supply, deliver and install 9W LED daylight downlight panel lighting fixture. Contractor to submit samples for approval.
- 6.2 Contractor to supply, deliver and install 6W LED warm white downlight panel lighting fixture. Contractor to submit samples for approval.
- 6.3 Contractor to supply, deliver and install LED Emergency lamp with the following specifications: Rated Output Voltage: AC 220-240v Frequency: 50/60Hz Luminaire: 2 x 6 pcs high power bright LED Rated output Lumens: 2 x 90Lm Emergency Duration: <3 Hours Rated Output Power: 3W Time of Recharge: 20 Hours Fuse Installed: 3A Battery Standard: 3.6V 1800Mah Ni-Cd Battery Contractor to submit sample for approval.

SECTION 7 : DOORS AND WINDOWS

7.1 Existing entrance door

- a. Existing panel door shall be retained, repaired and refurbished.
- b. Contractor to repair door surface and paint using quick drying enamel as per manufacturer's standards, including painting preparation.
- c. Contractor to replace existing hardware using new with approved equivalent.

Hinges	:	Install four (4) sets stainless steel 100mm x 100mm
		x 2.5mm ball bearing hinges.
Locksets	:	Install heavy duty luxury grip handle entrance door
		lockset in satin nickel finish.
Accessories	:	Install single cylinder deadbolt in satin nickel finish.
		Install satin nickel door viewer.
		Install stainless steel door chain.
		Install satin nickel door stopper.
		Install door seal with brush.

- d. Contractor to present and submit sample of hardware and accessories for approval prior to installation.
- 7.2 Flush doors. Verify dimensions in the schedule of doors.

a.	Door panel	:	50mm thick flush door complete with kiln dried 2" x
			2" wood frame and 6mm thick marine plywood
			face on both sides.
b.	Door jamb	:	50mm x 100mm thick kiln dried, S4S wood jamb
с.	Hardware	:	Provide four (4) sets stainless steel ball bearing
			hinges 100mm x 100mm x 2.5mm
			Install heavy duty cylindrical lever type lockset in
			satin nickel finish. Use entrance type for bedrooms
			and privacy type for toilet and bath doors.
d.	Accessories	:	Install satin nickel door stopper.
e.	Finish	:	Door panel and door jamb subject for quick drying
			enamel paint as per manufacturer's standards.
			Contractor to prepare surfaces as per construction
			approved standards. Submit paint swatches for
			approval.

7.3 **Toilet doors. Verify dimensions in the schedule of doors.**

a.	Door panel	:	50mm thick flush door complete with kiln dried 2" x
			2" wood frame and 6mm thick marine plywood
			face on both sides with louver panel with 50mm x
			50mm wood frame and wood louvers as per
			schedule of doors.
b.	Door jamb	:	50mm x 100mm thick kiln dried, S4S wood jamb
C.	Hardware	:	Provide four (4) sets stainless steel ball bearing
			hinges 100mm x 100mm x 2.5mm
			Install heavy duty cylindrical lever type lockset in
			satin nickel finish. Use entrance type for bedrooms
			and privacy type for toilet and bath doors.
d.	Accessories	:	Install satin nickel door stopper.
e.	Finish	:	Door panel and door jamb subject for quick drying
			enamel paint as per manufacturer's standards.
			Contractor to prepare surfaces as per construction
			approved standards. Submit paint swatches for
			approval.

7.4 Combination of fixed window glass with sliding glass door at balcony.

Supply, delivery and installation combination fixed window glass with sliding glass door using 6mm thick tempered glass panel with powder coated aluminium frame complete with necessary accessories, hardware, gaskets and sealants as per manufacturer's standards. Contractor to submit aluminium section proposals and shop drawings for approval.

7.5 Awning window at bedrooms

Supply, delivery and installation of awning window using 3mm thick tempered glass with powder coated aluminium frame complete with necessary accessories,

hardware, gaskets and sealants as per manufacturer's standards. Contractor to submit aluminium section proposal and shop drawings for approval.

7.6 Awning window at toilet and bathroom

Supply, delivery and installation of awning window using 6mm thick tempered glass with powder coated aluminium frame complete with necessary accessories, hardware, gaskets and sealants as per manufacturer's standards. Contractor to submit aluminium section proposal and shop drawings for approval.

SECTION 9 : MASONRY WORKS

- 9.1 Kitchen counter top. 20mm thick salt and pepper granite with 50mm height fascia with 18mm thick marine plywood substrate. Granite edges shall be quarter round trimmed. All exposed substrate and steel framing shall be surface repaired and painted using enamel paint as per manufacturer's standards. Contractor to submit shop drawing for framing and counter mounting for architect's approval.
- 9.2 Kitchen counter top splashboard. Contractor to supply, deliver and install 20mm thick x 100mm salt and pepper granite splash board at kitchen counter wall perimeter. Granite edges shall be quarter round trimmed.

SECTION 10 : TOILET FIXTURES

10.1 Water closet.

Base Material	:	Porcelain
Product type	:	Commercial Toilet
Rim Shape	:	Elongated
Trap Way	:	P-Trap
Colour	:	Asia White
Dimension	:	743mmL x 364mmW x 764mmH
Flushing Action	:	Washdown
Flush	:	Dual Flush
Flush Volume	:	3/6 Liters
Flushing Activ.	:	Flush Valve (Top Inlet)
Roughing-in	:	Wall Discharge (190mm)
Seat Cover	:	Soft Close Seat Cover
Features	:	Vitreous China Coated
		Elongated Action Bowl
		Family Health
		100% Factory Flush Tested
		East to Install and Maintain

10.2 Wall mounted with half pedestal cover

Base Material	:	Porcelain
Product Type	:	Vessel
Dimension	:	560mmL x 475mmW
Colour	:	White
Features	:	Vitreous China with nano coating
		Family Health Technology
		100% Factory Flush Tested
		Easy to Install and Maintenance

10.3	Basin faucet		
	Base Material	:	Brass/ Stainless Steel
	Colour	:	Chrome
	Dimensions	:	114mmL x 118mmH x 103mm Spout length
	Features	:	Brass Fittings
			Nickel and Chrome Plate Finish
			100% Factory Tested
			Easy to Install and Maintain

- 10.4 Shower faucet. Contractor to supply, deliver and install brass wall mounted tap with hose connector complete with escutcheon and accessories. Contractor to submit sample for approval.
- 10.5 Toilet bidet. Supply, delivery and installation of stainless steel toilet shower bidet complete with necessary fittings and accessories.
- 10.6 Stainless steel tissue paper holder wall mounted with lid. Contractor to submit sample for approval.
- 10.7 Stainless steel towel rack. Supply, delivery and installation of towel rack at shower area. Contractor to submit sample for approval.
- 10.8 Floor Drains. Floor drain shall be 102mm x 102mm x 68mm depth heavy duty brass material with bell trap. The strainer open area must be at least equal to its tail piece with insect proofing.
- 10.9 All toilet and bath fixtures are to be equipped with necessary mounting accessories and consumables (e.g. wax flange, angle valves, fittings, etc.) as per manufacturer's standards.

SECTION 11 : KITCHEN FIXTURES

11.1 Pantry sink – 920mmL x 430mmW x 150mmD SUS304 stainless steel topmount single bowl with drain board, complete with super-silencer pad, and 114mm/70mm

drain opening. Drop-in installation complete with P-trap, strainer and fastening clips as per manufacturer's standard. Contractor to provide silicon sealant at sink perimeter.

11.2 Pantry sink faucet mixer – stainless steel chrome finish faucet mixer faucet with brass fittings H293 x L188mm with minimal lead traces in waterways and corrosion resistance.

SECTION 12 : MISCELLANEOUS WORKS

- 12.1 Overhead kitchen cabinetry works. Contractor to supply, deliver and fabricate overhead kitchen cabinet shelves using melamine laminated white stipple on both faces with 18mm thick marine plywood substrate complete with 2mm thick pvc edgeband, mounting hardware and accessories and shelf support. Contractor to provide adjustable inside shelvings using melamine laminated white stipple on both faces with 18mm thick marine plywood substrate with 2mm thick pvc edgeband. All boards must be machine pressed, cut and all edgebands must be machine applied.
- 12.2 Kitchen base cabinetry works. Contractor to supply, deliver and fabricate kitchen base cabinet using melamine laminated white stipple on both faces with 18mm thick marine plywood substrate complete with 2mm thick pvc edgeband for carcass, and melamine laminated wood series on white side and white stipple finish on interior face with 18mm thick marine plywood substrate for cabinet doors, provide SUS304 concealed hinges, aluminium continuous handles, abs plastic plinth foot and necessary hardware and accessories and shelf support. Contractor to provide adjustable inside shelvings using melamine laminated white stipple on both faces with 18mm thick marine plywood substrate with 2mm thick pvc edgeband. All boards must be machine pressed, cut and all edgebands must be machine applied.
- 12.3 Executive room cabinetry works. Contractor to supply, deliver and fabricate executive room cabinet using melamine laminated white stipple on both faces with 18mm thick marine plywood substrate complete with 2mm thick pvc edgeband for carcass, and melamine laminated wood series on white side and white stipple finish on interior face with 18mm thick marine plywood substrate for cabinet doors, provide SUS304 concealed hinges, aluminium H-type handles, abs plastic plinth foot, drawer guides, oval section hanger rods with wall mounts and necessary hardware and accessories and shelf support. Contractor to provide adjustable inside shelvings using melamine laminated white stipple on both faces with 18mm thick marine plywood substrate with 2mm thick pvc edgeband. All boards must be machine pressed, cut and all edgebands must be machine applied.

SECTION 13 : WATERPROOFING WORKS

13.1 Toilet and bath, and balcony. Flooring and its perimeter walls 300mm from finish floor line subject for water proofing application. Contractor to use cementitious crystallization waterproofing using crystalline waterproofing formulation of selected blends of cement, fine quartz sand and active chemical constituents; with excellent adhesion to all cement based substrates. Contractor to follow manufacturer's standards for application. Contractor to submit proposals for approval. End of Architectural Works Specifications

SANITARY AND PLUMBING WORKS TECHNICAL SPECIFICATION

- 1. All plumbing works for this project shall be done in accordance with the approved plans and under the direct supervision and control of a Licensed Sanitary Engineer or Master Plumber.
- 2. The plumbing installation shall conform to the provisions of National Plumbing Code and the rules and regulations enforced on the locality. Install soil, waste, drain and vent pipes, install water pipes, fittings and connection.
- 3. The plumbing fixtures and accessories to be provided and installed shall be verified in the architectural specifications.
- 4. Contractor shall coordinate with the offices whose operations will be affected with the sanitary and water supply works.
- 5. All pipes shall be installed as indicated. Any relocation required for proper execution of other trades shall be with prior approval with the Sanitary Engineer or Master Plumber.
- 6. All horizontal sanitary pipings shall run in practical alignment & at uniform grade not less than 2% & shall be supported or anchored at interval not to exceed 10 feet.
- 7. All individual branches to fixtures and/or equipment shall be provided with air chamber or capped vertical pipe extensions:
- 8. Piping for drain, waste and vent shall be done using Polyvinyl Chloride (PVC) pipes, Series 1000 II, or approved equal. Fittings, valves, union patente, etc. shall conform to the stipulate
- 9. For the in-house water supply installation shall be done using High Density Polypropylene Random Copolymer (PPR) pipes, Class PN-20, or approved equal.
- 10. Proposed sanitary utilities shall conform to the actual location, depth, and invert elevation of all existing pipes and structures as verified by the contractor.
- 11. Contractor shall supply and install a water supply downfeed pipe in the existing pipe chase, as indicated in the plans, that will be connected to the water storage tanks located at the roof deck level of the building.
- 12. Size of water supply lines to fixture shall be in accordance with the manufacturer's instructions
- 13. Workmanship shall be of such character as to fully secure the results sought in all provision of the national plumbing code including the furnishing of all fittings, traps, valves & accessories required for a proper plumbing system.
- 14. Valves and fittings shall be for 150 lb/sq.inch rating.
- 15. All water, drainage and sewer lines shall be hydraulically tested prior to final tapping.
- 16. Contractor shall provide union patente after the gate valves as indicated in the plans to ease hydraulical testing, installation, and repairs.
- 17. Contractor shall provide stub-out for water supply and drainage for dental cuspidor.
- 18. Contractor shall install food waste disposers on each kitchen sink as per manufacturer's specifications.

End of Sanitary and Plumbing Works Specifications

ELECTRICAL AND AUXILIARY WORKS TECHNICAL SPECIFICATION

I. GENERAL CONDITIONS:

A. GENERAL

All electrical works for this project shall be governed by the provisions of the latest edition of the Philippine Electrical Code, rules and regulations of the local Authorities that have jurisdiction over the project and policies of electric and communication utility companies in the locality of Manila City where the project is being located.

The plans and specifications are complementary, and what is called for in one shall be taken as called for in both.

The General Conditions and provisions of the Civil Works Contract shall not be in conflict with the plans and specifications in any form or part of this section of the specifications.

B. VISIT THE SITE

The aspiring Electrical Contractor is advised to visit the site to ascertain for himself the prevailing local conditions thereat and to check the existing line facilities of local power and communication companies. Also, to investigate other pertinent things that may affect his work. It shall be presumed that he had done this before preparing his proposal and no subsequent claim on the ground of inadequate or inaccurate information will be entertained.

C. EXCAVATION AND BACKFILL

The winning Electrical Contractor shall be responsible for excavation to layout his electrical conduit. Excavation shall be such as to provide a uniform bearing for the conduit and shall be filled with gravel to grade and shall be part of his scope of work.

D. CUTTING AND PATCHING

The Electrical Contractor shall furnish sketches to the General Contractor showing the location and sizes of all openings, chases, sleeves and inserts. He shall be responsible for the cost of cutting and patching where any electrical items were not installed, incorrectly sized or located. No structural members shall be cut without the consent and proper direction from the Architect. All patching shall be performed in a neat and workmanlike manner acceptable to the Architect.

E. SUBCONTRACTING

Unless otherwise recommended on these specifications, the Electrical Contractor shall not subcontract the whole or any part of the work without the written consent of the Owner and the Architect. The Electrical Contractor shall be responsible for any work carried out by any subcontractor as if he himself were undertaking the job.

F. WORKMANSHIP

The Electrical Contractor shall execute all works in a neat and workmanlike manner and shall do all necessary works whether or not it is clearly specified in the plans and these specifications. All works shall be done in accordance with the best practices employed in modern electrical installations.

The Electrical Contractor shall employ only skilled, competent and efficient workmen and shall, upon written request of the Architect/Project In-charge, discharge or otherwise remove from work any employee who, in the opinion of the Architect/Project In-charge, is careless, incompetent, an obstruction to the progress of the work, acts contrary to instructions or conducts himself improperly.

G. STANDARD OF MATERIALS

All materials shall be new and must conform with the technical specifications. They shall be standard products of reputable manufacturers and shall bear its name.

All materials shall be subject to the approval of the Architect/Electrical Designer. This approval shall not relieve the Electrical Contractor of the responsibility of inspecting such materials for defects and non-conformance with the specifications.

Where the technical specifications or the drawing give the name of the manufacturer and/or catalog number of a material, it is given as guide as to the size, strength, quality or class of the Material desired and shall be interpreted to mean that the item or another fully equal is suitable for the service intended. Substitution shall be subject to prior written approval of the Architect/Electrical Designer.

The apparent silence of the specifications and drawings as to any detail or apparent omission from them of a detailed description concerning any material shall be regarded to mean that only materials of first class quality shall be used.

H. REMOVAL OF DEFECTIVE OR UNATHORIZED WORK

Any defective work due to poor workmanship, defective materials, damaged through carelessness or any other cause, found to exist prior to acceptance of or final payment for the work shall be removed immediately and replaced by work and material which shall conform to these specifications or, otherwise, remedied in an acceptable manner. This clause shall have effect regardless of the fact that the work may have been done within the full knowledge of the Architect/Designer.

All materials not conforming to the requirements of the technical specifications shall be considered as defective and subject for replacement at contractor sole expense.

I. CONFORMITY WITH PLANS AND ALOWABLE DEVIATIONS

These specifications and drawings indicate the general layout of the system and the Electrical Contractor shall be responsible for the proper installation of the system without substantial alterations or modifications. Whenever departures from the specifications and the drawings become inevitable due to field condition or exigencies of construction, details of proposed departures shall be submitted without delay to the Architect for approval.

J. COORDINATIONS WITH OTHER CONTRACTORS

The Electrical Contractor shall familiarize himself with the specifications and drawings of the Civil Works and those work of the specialty trades to avoid conflict with their work. Whenever conflict with the works of other trades are identified or pointed, this should be brought to the attention of the Architect/Designer immediately for proper disposition and coordination to arrive at the best solution.

K. INJURY TO PERSONS OR DAMAGE TO PROPERTY

The Electrical Contractor shall be responsible for all injuries to persons and damage to property caused by his work or by his workmen and shall be liable for any claim against the Owner on account of such injury and/or damage. Likewise, he shall be liable to damages and loss of Owner's property caused by inclement weather or theft due to his defective work, negligence or carelessness of his men.

Should the Electrical Contractor cause damage to the works of any other contractor he should settle the matter between them and free the Owner from any claim on account of such damage.

L. SUSPENSION OR DELAYS

The Electrical Contractor shall not suspend or fail to make progress in his work without justifiable cause. In the event of continuous delay or suspension of the work still persists despite a written complaint, the Owner shall have the right to take over the work and all materials in the site and take the necessary steps to have the work completed by others.

M. INSPECTION AND TEST

The Architect/Electrical Designer or his representative, shall be allowed access to all parts of the work at all times and shall be furnished information and assistance by the Electrical Contractor to conduct a detailed inspection test. The cost of such inspection and test shall be borned by the Electrical Contractor.

The Electrical Contractor shall conduct the following tests, where applicable, on all electrical conductors and equipment installed in the presence of the Owner or his duly authorized representative.

- a) Ground resistance test
- b) Insulation resistance test
- c) Continuity test
d) Voltage level test

The Electrical Contractor shall also check circuit connection at panel boards, and see to it that all single phase circuits are connected to phase as shown in the load schedule.

All reports must be formal, typewritten and signed with the signatory properly identified.

All defects found during the tests shall be repaired immediately by the Electrical Contractor.

All tools, equipment and instruments needed to conduct the tests shall be on the account of the Electrical Contractor.

N. CLEANING UP

During the of the entire work, the Electrical Contractor shall keep clean the premises at all times by removing all dirt, debris, rubbish and waste materials caused by him in the performance of his work. He shall remove all tools, scaffoldings and surplus materials after completion and acceptance of the work.

O. LEAVING THE SITE

The Electrical Contractor shall not withdraw from the site until the whole electrical system is complete and in operating condition and ready for use by the Owner.

P. PERMITS AND DUES

The Electrical Contractor shall secure all necessary permits at his own expense and pay all corresponding government fees and taxes.

The Electrical Contractor shall include in his work, without extra cost to the Owner or Architect, drawings (in addition to the contract drawings and documents) and associated paper works as required by the electric, telephone and other utility companies and government authorities having jurisdiction over the job site.

Q. AS-BUILT DRAWINGS

The Electrical Contractor shall record all deviations made from approved construction plans during the progress of electrical construction and shall reflect the actual layout in the as-built plans. Upon completion of the project, the Electrical Contractor shall submit to the Architect two (2)complete sets of as-built plans signed and sealed by the Electrical Contractor's Professional Electrical Engineer. One (1) set of original reproducible copy shall be submitted to the Owner.

R. INSPECTION AND CERTIFICATES

Upon completion of the entire installation, the approval of the Architect/Electrical Design and Owner shall be secured. The Electrical Contractor shall obtain, at his own expense, a Certificate of Electrical Inspection from the government authorities having jurisdiction over the project and submit same to the Architect/Electrical Design prior to final payment.

S. GUARANTY

The Electrical Contractor shall leave the entire electrical work in proper working condition. He shall replace any defective work or materials furnished and installed by him without charge of labor and materials except those caused by ordinary wear and tear within a period of one year from the date of acceptance of the project by the Owner or Architect.

T. EQUIVALENTS

When materials or equipment are mentioned by name, they shall form the basis of the contract. If the name is not mentioned, the Electrical Contractor may, thru written request, recommend an equivalent subject to the approval of the Architect/Electrical Design. Substitution of specified materials, if allowed or approved by the Architect/Electrical Design, will credit the Owner of any savings so obtained from the difference in cost.

U. DETAILED BREAKDOWN OF ESTIMATE

The Electrical Contractor shall submit a detailed estimate on each listed electrical system along with the bid proposal.

V. WORK NOT INCLUDED

- a) Furnishing and installation of the kilowatt hour meter which is to be supplied by others.
- b) Furnish and install telephone handsets, equipment and telephone service entrance cable which are to be supplied by Meralco.
- c) Civil, Sanitary and Mechanical Works.

II. TECHNICAL SPECIFICATIONS:

A. SERVICE

a) Service voltage from service drop shall be:
 460-Volts, Three (3Ø) Phase , 4-Wires, 60 Hz.

B. WIRING METHODS

- a) Power service entrance and those at the kilowatt-hour meter shall be in IMC pipes.
- b) Telephone service entrances shall be in EMT or PVC Pipes.
- c) Conduit runs for branch circuits and auxiliary systems shall be in IMC, EMT or PVC pipes.
- d) Exposed installations that are liable to be subjected to physical injury shall be in IMC pipes.

C. GROUNDING

The following shall be grounded in accordance with the drawings and the requirements of the Philippine Electrical Code.

- a) Metal enclosures of panel boards and circuit breakers, wire gutters, pull boxes, junction boxes and utility boxes.
- b) Non-current carrying metal parts of lighting fixtures, devices and motors metal enclosure.
- c) Provide a continuous and effective equipment grounding system.

D. DISTRIBUTION FEEDERS

Feeder conductors and raceways shall be installed as shown on the plans and no changes in size shall be made without written consent from the Architect and Electrical Designer. Feeder conductors shall be continuous without splices to its destination panel boards, circuit breakers and wire gutters.

E. BRANCH CIRCUITS

The plans indicate the general installation of all circuit wirings and outlets. Branch circuit raceways shall follow the line of shortest distance between connection points as practicable and in so far as the building condition would allow. However, exposed feeders and circuit raceways shall be installed following the building line. No wires of different circuits shall be inserted in one conduit. Where homerun for light and branch circuits exceeds seventy (70) meters, the next larger conductor size shall be used.

F. OUTLET, SWITCH AND SPLICE BOXES

Power, lighting and auxiliary outlet boxes shall be deep type and fabricated from gauge no.16 standard pressed steel or cast metal sheet coated with epoxy primer before installation.

G. RACEWAY SYSTEM

Conduit raceways and tubing shall not have more than four quarter bends in any continuous run. Where more than four (4) 90-degree bends become necessary, a pull box shall be installed to reduce the four (4) quarter bends into halves. Exposed conduits shall be run parallel with or perpendicular to the building line. Exposed conduits shall be secured in place by means of approved supports, hangers or fastenings. Conduit supports shall be fastened to walls by means of bolts with expansion sleeves. The use of wood or lead plugs is not permitted. All conduit ends shall be firmly attached to cabinets or boxes by means of locknuts and bushings.

Field bends shall not be allowed for rigid steel conduits larger than 20mm diameter.

Thread less couplings and connectors used with the tubing shall be of concrete-tight type. No tubing smaller than 15mm diameter shall be used.

Exposed conduits shall be treated with epoxy primer and finished with gray color paint. All field cut threads shall be painted with white lead or epoxy primer.

III. SPECIFICATIONS OF MATERIALS

- A. Where specifications of any type of material or equipment are in question, such materials shall conform to the standard specifications set by the following:
 - a) U.S. UNDERWRITERS LABORATORIES
 - b) U.S. NATIONAL BOARD OF FIRE UNDERWRITERS
 - c) NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
 - d) INSULATED POWER CABLE
 - e) AMERICAN STANDARDS ASSOCIATION
 - f) BUREAU OF STANDARDS, DEPARTMENT OF TRADE
 - g) PHILIPPINE NATIONAL STANDARDS

B. CONDUITS

- a) Intermediate Metallic Conduit (IMC): Shall be hot dipped galvanized, standard weight pipes made of mild steel smooth circular bore. It shall be in standard length of 3.05 meters including coupling, reamed and threaded on each end (Panasonic or approved equal).
- b) Non-metallic conduit (PVC): CS40 smooth wall non-metallic conduit conforming to Philippine National Standards No.14 for PVC Pipes. Conduit shall be in standard length of 3.05 meters including coupling (Atlanta or approved equal).

C. SWITCHES, PANELBOARDS AND CIRCUIT BREAKERS

a) Circuit Breakers

Molded case circuit breakers shall be Schneider Electric, General Electric, Japanmade Fuji or Mitsubishi or approved equal. No bracing on handles of single pole breakers shall be allowed in lieu of two or three pole MCCB types.

b) Metal Enclosures and Cabinets

Panel board enclosures, telephone cabinets, busbar gutters, pull boxes, and wire gutters for feeders shall be locally fabricated by reputable manufacturers such as Fuji-Haya, Allied, Asiaphil, Trisys or approved equal.

D. WIRES AND CABLES

Wires and cables shall be insulated for 600 volts. Feeder, sub-feeders and branch circuit wire and cables shall be soft drawn copper, annealed and of 98% conductivity, type THHN Phelps Dodge, Duraflex or Philflex.

E. LIGHTING FIXTURES

Owner furnish contractor install (OFCI), for final selection of Fixtures consult Principal Architect or Interior Designer.

F. WIRING DEVICES

The following wiring devices are for all small appliances, receptacles and switches to control lights only. For other specific loads they shall be described accordingly.

- a) Duplex convenience outlet, grounding type, 10A, 250V, National Wide Series or approved equal.
- b) Single-pole switch with mounting strap and device plate cover, 15A, 300V, National Wide Series or approved equal.
- c) Two gang single-pole switch with mounting strap and device plate cover, 15A, 300V, National Wide Series or approved equal.
- d) Three gang single-pole switch with mounting strap and device plate cover, 15A, 300V, National Wide Series or approved equal.
- e) Three way switch with mounting strap and device plate cover, 15A, 300V, National Wide Series or approved equal.
- f) Special purpose outlet shall be as specified in the plans.

G. TELEPHONE SYSTEMS

The Electrical Contractor shall furnish and install the complete telephone equipment and materials such as main distribution frame, terminal cabinets, house cables, terminal blocks, station wirings, conduits, outlets, boxes, manholes or hand holes.

Terminal cabinets shall be fabricated from 1.5mm thick B.I. sheet, treated with epoxy primer and baked enamel paint finish. Each cabinet shall be provided with 20mm thick treated ply board backing.

H. WARRANTY

The Electrical Contractor shall issue a Warranty Certificate upon completion and turnover of project, stating that the project is free from any defects, line to grounds or line to line short circuit and that the Contractor is giving a one (1) full year warrantee for the said project starting from the date of turn-over of project and owners acceptance.

End of Electrical and Auxiliary Works Specifications

MECHANICAL WORKS TECHNICAL SPECIFICATION

MECHANICAL GENERAL REQUIREMENTS

- 1.01 GENERAL DESCRIPTION:
- Α. The work to be done under this Specification consists of the fabrication, furnishing, delivery and installation, complete in all details, testing and commissioning of this subcontract, at the subject premises and all work materials incidental to the proper completion of the installation, except those where same shall conflict with Codes, etc.., which latter shall then govern. The requirements with regard to materials and workmanship specify the required standard for the furnishing of all labor, materials, and appliances necessary for complete installation of the work specified herein and indicated in the drawings. The Specifications are intended to provide a broad outline of the required equipment, but are not intended to include all details of design and construction.

The term "Contractor" in this specification means "Sub-contractor" unless otherwise specified.

B. SCOPE OF WORK

Under this section of the specifications, provide all labor, materials and equipment and perform all the work necessary for the complete execution of all the work as shown on Drawings and Specified in this specification.

Scope of work shall include but not be limited to the following principal items of work for Air-Conditioning and Mechanical Ventilation System.

- 1. Supply and installation of ventilation ductwork and accessories such as dampers access panel diffusers. This includes staircase pressurization and smoke extraction system.
- 2. Supply and installation of insulation for ductwork, chilled water piping and air conditioning equipment.
- 3. Supply and installation of air conditioning and ventilation equipment.
- 4. Testing balancing and commissioning
- 5. Free maintenance for a period of 12 months after practical completion
- 6. Supply of manufacturer's recommended spare parts.
- 7. Furnishing and installation of instruction and identifications boards, charts, signs and markers, to include operating methods and instructions.
- 8. Priming and finish painting of cladded and exposed piping and other part of chilled water and refrigerant piping.

- 9. Miscellaneous items and other related materials required for the satisfactory completion of the air conditioning and ventilation system to include metal works, hangers, supports, anchors, bolts, bracing, vibration isolators, equipment concrete pads, and its accessories.
- 10. Securing and payment of permits, licenses and bonds for the construction purposes, including approval from local government unit.
- 11. Contingency to include the furnishing of written one (1) year warranty upon completion works.
- 12. Securing and payments of all Contractor's taxes, VAT, etc.
- 13. Furnishing and installation of instruction and identifications boards, charts, signs and markers, to include operating methods and instructions.
- 14. Priming and finish painting of cladded and exposed piping and other part of chilled water and refrigerant piping.
- 15. Miscellaneous items and other related materials required for the satisfactory completion of the air conditioning and ventilation system to include metal works, hangers, supports, anchors, bolts, bracing, vibration isolators, equipment concrete pads, and its accessories.
- 16. Preparation and submission of As-Built drawings in reproducible sheets including two (2) white prints copies at no cost to the Owner(s).
- C. WORK NOT INCLUDED:
- 1. All builder's work,
- 2. All cutting and patching of concrete openings.
- 3. Electric power terminating to disconnect.
- 4. Water supply to equipment connection.
- D. BUILDING PROVISION

Certain provisions have been made in the Building for the accommodation of the installation. These provisions include space allocation, holes through beams and structural slabs, etc. the provisions so made are shown on the Drawings. Before proceeding with the Works, the Subcontractor is to check and confirm that the provisions are satisfactory for the Works, and where necessary, additional information and requirements is to be furnished.

It is the Sub-Contractor's responsibility to ensure that the Main Contractor is informed of all holes and any other provision requested in the structure.

Any subsequent structural openings required due to negligence in providing sleeves beforehand shall be at the expense of the Sub-Contractor unless

they are covered on a duly authorized variation order issued by the Project Manager.

All pipe sleeves shall be supplied and installed by the Sub-Contractor. The Main Contractor shall ensure that the fixing is good and the sleeves will not be shifted or moved by concreting or by the trades.

It is also the Sub-Contractor's responsibility to check and ensure that all holes, openings etc., are provided correctly during construction of the building.

PART 2.00

- 2.01 OTHER APPLICABLE STANDARD OR CODE FOR TGIS SUB-CONTRACT:
- A. CODE:
- 1. Applicable local ordinances of Municipal Government.
- 2. Philippine Society of Mechanical Engineer's Code.
- 3. Philippine Plumbing Code.
- 4. National Electrical Code.
- 5. Philippine Electrical Code.
- B. STANDARD:
- 1. Underwriters Laboratories (UL)
- 2. American Society of Testing and Material (ASTM)
- 3. American National Standard Institute (ANSI)
- 4. National Electrical Manufacturer's Association (NEMA)
- 5. American Society of Mechanical Engineers (ASME)
- 6. Factory Material Engineering Corporation (FM)
- 7. National Fire Protection Association (NFPA)
- 8. American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
- 9. Cool Tower Institute (CTI)
- 10. American Refrigeration Institute (ARI) Proof of conformance shall be submitted to the Project Manager for approval.

Nothing contained in these specifications or shown on the drawings shall be constructed as to conflict with national and local ordinances or laws of the Philippines. All such laws and ordinance form part of this specification.

AIR HANDLING AND DISTRIBUTION EQUIPMENT

1.01 GENERAL REQUIREMENTS

Section 15000, "General Requirements, Mechanical," with the additions and modifications specified herein, applies.

- 1.02 SUBMITTALS: SUBMIT THE FOLLOWING:
 - A. MANUFACTURERS DATA 1. Fans and Blowers
 - B. STANDARD COMPLIANCE AND MANUALS 1. Fans and Blowers
 - C. CERTIFIED TEST REPORT

Provide for corrosion protection

1. Corrosion Protection

The affected equipment shall be protected by the manufacturer with corrosion- inhibiting coating or paint system that has proved capable of satisfactorily withstanding corrosion in accordance with ASTM B 117. Test period shall be 125 hours for equipment installation indoors and 500 hours for equipment installed outdoors or otherwise subjected to a marine atmosphere. Each specimen shall have a standard scratch as defined in ASTM D 1654. Electro-plated zinc coating shall not be less than 0.0127 mm average.

2. Corrosion Criteria

Upon completion of exposure, coating or paint shall show no indication of deterioration or loss of adhesion nor, shall there be indication of rust or corrosion extending further than 3mm on either side of original scratch.

- Thickness of Coating : Thickness of coating or paint system on the actual equipment shall be identical to that on the test specimen with respect to materials, condition of application, and dry film thickness.
 - 2.01 FANS:

All fans shall be complete with motor and vibration elimination mounting and for centrifugal fans, with belt drive, pulleys, guards, starter panels of type approved by the Project Manager. AMCA 99 statically and dynamically balanced, with air capacities, brake horsepower, fan types, fan arrangement, noise level (sound power level) pressure ratings as indicated. Fans shall sound-rated in accordance and with AMCA 300. Fane bearing life shall be minimum 200,000 hours at operating conditions. Provide bird screens for outdoor inlet and outlets. Equip backdraft dampers (for connection to outdoor louvers and at guards shall be provided for location as shown on drawings. Wire exposed pulleys and belts (i.e not inside air duct or housing mounting). Have thermal overload protection in the operating disconnect switches starter, etc. for centrifugal fans and 3-phase motor within the building. Housing and fan wheel shall be aluminum or steel except as specified otherwise. Explosion proof fans shall have non-metallic blower.

Motor speed shall not exceed 1750rpm. Fan shall be of highly efficiency at duty point and low noise.

The fan resistances indicated on equipment schedule and drawings are for reference only. The Sub-Contractor shall check the exact resistance with calculation submitted for approval before ordering. Any required modification to the system (e.g fan size, motor, switchgears, and cables) to meet the specified duty and space condition shall be entirely at the Sub-Contractor's expenses.

A. CENTRIFUGAL FANS-FORWARD CURVE, AIRFOIL AND BACKWARDLY INCLINED:

Centrifugal type fan units compete with motors and drive equipment shall be installed where shown on the drawings. Fan wheels for the kitchen exhaust fan and fans having air flow rate exceeding 10,000 cfm shall have backwardly-inclined or airfoil continuous welded blades. For fan having airflow rate not exceeding 10,000 cfm shall have forward curved with belt drive as scheduled unless otherwise specified. Impellers are to be hot dipped galvanized after fabrication. For small fans less than 2,000 cfm, blades may be of extruded aluminum riveted to the rim. All fans shall be driven by means of multiple "vee" belts. Each drive shall be enclosed in a suitable guard approved by the Project Manager. Belt speed shall not exceed 5,000 fpm. The fans shall be of bright steel and shall be of ample proportions so that outlet velocities will not exceed those indicated, and shall be equipped with removable angles and bolts for attaching canvas or other flexible connections. All large fans scrolls shall be provided with drain plugs and access panel.

All pulleys shall be variable pitch pulleys.

B. PROPELLER FANS

Propeller fans shall furnished complete with single or and belt drive motor (as scheduled) drive equipment and fan guards. Fans and motor shall be mounted on resilient supports and a heavy metal frame. Provide angles/or plates required to mount the fans and dampers in the openings provided.

Belt driven fans shall have pitch pulley.

Motor shall be totally enclosed construction with permanently lubricated ball bearings. Impeller shall be made of steel while hub is made of steel aluminum.

C. IN-LINE TUBULAR/CABINET TYPE CENTRIFUGAL FANS:

AMCA 210 tested and rated, with welded tubular steel casings, tubular centrifugal backward-inclined blades, stationary discharged conversion vanes, belt guards, and adjustable motor-mounts and variable pitch pulleys for belt driven fans. Provide slip-fit or flanged connection between fan casings and ductwork. Air shall enter and leave fans axially. Inlet shall be streamlined with conversion vanes and bell mouth. Enclose and isolate fan bearings and drive shafts from air stream. Treatment and painting shall be manufacturer's standard. TEAO motors shall be guarded V-belt drives. Provide fan supports an vibration isolators as indicated.

D. CENTRIFUGAL FAN FOR KITCHEN EXHJAUST:

The centrifugal fan for kitchen exhaust shall have the following features:
 Suitable for discharge of hot greasy moist kitchen range hood exhaust air up to 200°C which is slightly laden with detergent vapour.

- 2. The fan shall be SISW or DIDW, as specified backward curve with continuous welded, impeller construction guide inlet vane controller capable of automatic reduction of fan capacity to 45% of the specified duty. The inlet guide vane shall be suitable for the gases to be handled.
- 3. Fan belts, pulley and bearing shall be rated for duty up to 200°C. Pulley shall be variable pitch.
- 4. Fan and belts shall be continuously welded heavy gauge, with internal duct flanges to prevent grease and moisture leakage.
- 5. The fan wheel shall be of the non-overloading backward incline centrifugal type. Wheels shall be statically and dynamically balanced grade. Wheels shall be constructed with half-welded and half riveted aluminum with a maximum pressure capability of 2 inches W.G.
- 6. Motors to be NEMA frame, 1,800 or 3600 rpm, Open Drip Proof, Totally Enclosed Fan Cooled (TEFC).

7. Due to limited ceiling void space for the location of ventilating fans, it is advisable that the contractors take note of the dimension of the fans to be installed.

2.02 FACTORY FABRICATED AIR HANDLERS (AIR HANDLING UNIT):

ARI 430, single zone draw thru type with arrangement and pressure rating as indicated. Air handler shall be sound-rated in accordance with ASHRAE 68. Sound rating shall not exceed specified dBA ratings. Submit sound power data in all octave-band center frequencies. Such data shall apply to the minimum noise area of the performance curve. Units shall consist of damper section, supply blower section, filter box, and coil section. All bolts, screws and washers shall be cadmium plated steel.

A. CASING:

Construct casings of double skinned galvanized steel. Provide removable panels securely bolted or locked on independent structural frame and avoid drumming to form rigid and durable construction and reinforced to access doors for inspection and access for internal parts. Surface of steel parts which are not zinc-coated and all surfaces exposed to the weather shall be protected against corrosion by paint or coating system. Reinforce point of support for mounting units. Make airtight joints. Insulate casing with 50mm polyurethane foam insulation meeting NFPA 90 requirements. All panel joints and connection shall be gasketed to prevent cold bridges.

B. DAMPER SECTIONS:

Permanently secure damper blades on a single shaft with sintered bronze or nylon bearings. Connect damper shafts together by one continuous linkage bar, which may be cut in field to separate the damper openings, with grouping as required. Discharge air vertically or horizontally.

C. DIDW SUPPLY BLOWER (FAN) SECTIONS:

Centrifugal fan of backward-inclined for duty exceeding 10,000 cfm, forward curve or airfoil Type for duty less than 10,000 cfm and VAV air handling units unless otherwise specified with V-belt drives motor, adjustable motor base, with internal and external belt guards as specified. Bearings shall be grease- lubricated ball bearings type, with minimum 200,000-hour life. Grease fittings will be extended to the casing.

Fan wheel shall be electro-galvanized after fabrication. Fan shall be solid or hallow construction. Fan shafts with intermediate bearings are not acceptable. Extend drain pan to the blower section to catch any carry-over of moisture.

Fan resistances indicated on equipment schedules and drawings are for reference only. The Sub-Contractor shall check the exact resistance with calculation submitted for approval before ordering. Any required modification to the system (e.g. fan size, motor, switchgear, cables silencers, etc.) to meet the specified duty and space conditions shall be entirely at the Sub-Contractor's expense.

All fans shall be provided with variable pitch pulleys. Pulleys shall bemultiplesheaves and belts selected such that full fan bhp is handledwith one beltbroken.

D. FILTER BOXES:

Design airtight filter boxes to hold filters conforming to requirements of Section 15200 "Ductwork and Accessories".

E. FILTER DRAFT GAUGES - DIAL TYPE:

Gauge shall be 100mm dial type, diaphragm actuated with a range of 0 tp 500 Pa with 12.5 Pa division, installed with filter gauge accessory package. Provide a draft gauge at each filter bank. Filter gauge shall have a dial indicator and dry alarm contact for connection to a Building Management System (BMS).

F. MIXING BOXES:

Include equally sized flanged openings, sized to handle full airflow capacity. Provide automatic dampers as indicated. Arrange dampers in such a way that when one starts to close from its opened position the other starts to open from its closed position.

G. OUTSIDE AIR INTAKE:

The outside air intake, if ducted to the air handling shall be complete with unit volume dampers or automatic dampers, if the latter is specified.

H. COIL SELECTIONS:

Coils shall be removable and sha;; contain cooling coils in common or individual casing as manufacturer's standard. Cooling coils shall have insulated drain pans with piping connections to remove condensate. Seal coils to casing to prevent leakage of air around coils. Coils shall be seamless copper, to be mechanically bonded to aluminum plate fins by expansion of tube in fin collars. Unless otherwise specified, cooling coils shall not have more than 8 rows. Rows and fins shall be as specified in the schedule. By pass factor of the coil shall have a range of 0.08 to 0.15. Cooling coil shall be ARI certified. Headers for coil shall have a range of up to 900mm height shall be cast iron and copper headers shall be used for more than 900mm. Ample space shall be allowed at both sides of coil to facilitate periodic cleaning. Drain shall be provided to all coils for complete draining of water and vent for manual air venting.

Coils shall be designed for 250 psi working pressure or higher and water velocity shall be between 120 fpm to 360 fpm. Air face velocity through coil shall not be greater than 500 fpm. Maximum fin space shall be 12 per inch.

2.03 FAN COIL UNIT:

Fan Coil Unit shall be provided where shown, complete with all necessary components, including coils, drip pans, motors, etc. Size anf type of unit shall be as scheduled on the drawings. The casing shall lined with 25mm rigid glass fiber sound and thermal insulating board. Units shall be ceiling suspended and wall mounted unless otherwise specified. Filters shall be washable type. Coils shall be seamless copper tubing expanded into aluminum plate fins, for 1670 kPa working pressure rated tested at 2500 kPa air. Fans shall be aluminum forwardly-curved centrifugal; type, belt or direct driven. Motors shall be single phase, long life high efficiency permanent split capacitor type with built in impedance protection and permanently lubricated ball bearings with 100,000 hour life. Direct-connected motor shall be 3 speed type. Provide fusestat overload device for motor protection, disconnect switch and permanent greenfield connection to motors. The drip pan shall be constructed of steel with bituminous coating. The outside shall be insulated galvanized with 20mm polystrene insulation or approved equivalent. Drip pan shall extend below the 2way control valve.

A. COILS

Single chilled water coil with aluminum fins and copper tubes. Coil duty shall satisfy both specified total cooling load and total sensible load.

B. FAN:

Fan motor shall be premium efficiency rating.

- C. HOUSING:
- 1. Exposed unit shall be 1.3mm (minimum) steel, phosepahtized, prime coated and finish with baked enamel.
- 2. The return air plenum shall be large enough to remove the blower section.
- D. DRIP TRAYS:

Fan coil unit shall be provided with drip trays insulated with pipe connection to condensate drain.

E. CONTROLS:

Electric type as indicated. Interlock valves with fans so that the valves shall be de-energized and fluid flow stopped when fans are turned off.

1. FANS:

Manual with three-speed fan switch

2. VALVES:

Unless otherwise specified control valves for fan coil units shall be of twoway modulating type normally closed. Two-way motor operated valves.

3. THERMOSTAT:

Valve operator shall be of the silent operation electric type that closes or open the valve to control the room temperature.

2.04 MOTOR AND MOTOR STARTERS:

Motors shall be totally enclosed fan cooled and drip proof. Motor starters shall be magnetic across the line for 3.8 KW and below. Motor 5.5 KW above shall be reduced voltage wye delta type.

2.05 BELT DRIVES

- 1. Fans shall be V-belt driven as specified in the schedules. Sheaves shall be of the adjustable ratio type, and of approve make. They shall be sized to give the required fan speed with the motor sheave at about the middle of its range of adjustment. There shall be at least two belts, capable of carrying the entire load with one belt broket. Furnish and install belt guards perforated metal for all sheaves and belts. Belt shall have grommeted openings at the fan and motor shafts to facilitate tachometer readings. All belt connected motors shall have adjustable bases and set screws to maintain proper belt tension.
- 2. The fan wheel shall be statically and dynamically balanced and over hung on a steel shaft running on heavy duty ball bearings. Bearings shall be selfaligning. To prevent leakage of oil and grease; cups or oil chambers must be provided in accessible position outside of the duct connection for easy lubrication. All bearings within the air stream shall be sleeve bearings. Brackets must be cast iron and mounted on side of the blower.
- Fan housing shall be constructed of galvanized steel or aluminum and rigidly built and braced. The fan scroll shall be of galvanized steel. Where fam scroll 480mm or more in width, an access door shall be provided. The door shall be of the pan tpe set in a raised frame by hand frip bolts, and shall be provided

with lift handles. Fan and their motor drives shall be supported on vibration absorbing bases. Provide a 12mm drain valve in the housing for fan wheel diameter of 480mm or more.

3.01 INSTALLATION:

Install air distribution equipment as indicated and in accordance with the manufacturer's instructions. Provide clearance for inspection repair, replacement and service. Electrical work shall conform with NFPA 70. Provide conduits for wirings. Equip motors with un-fused safety disconnect switches mounted under or near fan housings. Provide overload protection in the operating disconnect switches and magnetic starters.

3.02 FIELD INSPECTION AND TESTS:

Schedule and administer the specified tests. Provide personnel, instruments, and equipment for such tests. Correct defects and repeat the respective inspection tests. Give the Engineer ample notice of the dates and times scheduled for tests and trial operations. Conduct inspection and testing in presence of the Engineers. Submit test data certified by the equipment manufacturer's representative.

3.03 FIELD INSPECTION:

the

Prior to initial operation, inspect equipment installation for conformance with drawings and specifications.

- 3.04 FIELD TESTS:
- 1. Preliminary Tests:

For each air handling and distribution equipment and its components, perform an operational test for a minimum period of 24 hours.

SECTION 15200 DUCTWORK AND ACCESSORIES

1.01 GENERAL REQUIREMENTS

Section 15000, "General Requirements, Mechanical," with the additions and modifications specified herein, applies.

A. SCOPE OF WORK

The work involves the supply and installation of ductworks and itsaccessoriesincluding dampers, fire dampers, hangers, diffusers, registers, grilles,troffers,flexible ducts, sound attenuators, filters, louvers, accesspanels flow andpressure test ports.

1.02 SMACNA DUCT CONSTRUCTION MANUALS:

The SMACNA recommendations shall be considered as mandatory requirements. Substitute the word "shall" for the world "should" in these manuals.

1.03 CORROSION PREVENTION

Special protection is not required for equipment that has a zinc coating conforming to ASTM A 386 or a duplex coating of zinc and paint. Where expressly stipulated in equipment requirements paragraph below, the affected equipment item shall be protected by the manufacturer with a corrosion inhibiting coating or paint system that has been proved capable of satisfactorily withstanding the following test. Test method shall be ASTM B 117. Period of test shall be 125 hours for equipment intended for installation indoors; shall be 500 hours for equipment which will be installed outdoors or test period which will be otherwise subjected to marine atmosphere. Each specimen shall have a standard scratch as defined ASTM D 1654.

A. CRITERIA:

Upon completion of exposure, coating or paint shall show no indication of deterioration or loss of adhesion. Nor shall there be indication of rust or corrosion extending further than 3mm on either side of original scratch.

B. THICKNESS OF COATING

Thickness of coating or paint system on the actual equipment shall be identical to that on the test specimens with respect to materials, conditions of application, and dry film thickness.

1.04 DIMENSIONS

Duct sizes given in the drawings are clear internal dimensions and allowance shall be made for both internal and external insulation and/or acoustic linings where applicable.

2.01 SHEET METAL MATERIALS:

A. GALVANIZED STEEL SHEET

ASTM A52 designation G.90 galvanized and lock forming quality. Thickness and weight shall not be less than that specified in Chapter "DUCT CONSTRUCTION" of ASHRAE HANDBOOK.

C. GALVANIZED STEEL HOT DIPPED AFTER FABRICATION:

ASTM A23

Galvanized steel shall be as manufactured by Philsteel, APO/Puyat Steel

2.02 SHEET METAL WORK:

 A. All sheet metal work for the air conditioning and ventilation system shall be furnished, installed, completely connected, cleaned, tested and, adjusted by the Sub-Contractor. This shall include the following major items of work.

B. DUCTWORK FOR CONVENTONAL SYSTEMS:

1.All sheet metal work exposed to the weather and elsewhere as indicated on
drawings, shall be built substantially as shown, of galvanized steel or
aluminumaluminumsteel sheet properly braced and supported and secured to the
buildingbuildingconstruction and/or equipment. Wherever not otherwise specified
thicknessthicknessshall be as follows:

Larger Dimension (US)	Galvanized	Aluminum
Up to 600mm No. 26	US Gauge	No. 24 US Gauge
600mm to 1200mm	No. 18 US Gaug	e No. 20 US Gauge
1200mm and larger	No. 16 US Gaug	e No. 18 US Gauge

2. All other ductwork for conventional system, except where otherwise specified, shall be built of best bloom galvanized iron or aluminum of the thicknesses.

Larger Dimension (US)	Galvanized	Aluminum
Up to 300mm No. 26	US Gauge	No. 24 US Gauge
325mm to 750mm	No. 24 US Gaug	e No. 22 US Gauge
775mm and 1350mm	No. 22 US Gaug	e No. 20 US Gauge
1375mm to 2100mm	No. 20 US Gaug	e No. 18 US Gauge
Above 2100mm No. 18	US Gauge	No. 16 US Gauge

- All exhaust ductwork securing kitchen shall be formed from 304 stainless
 sheet ductworks shall have soldered seams and low points shall have a drain sump. Air tight access door shall be provided every bend and 4m length of minimum size 450 x 450mm. Thickness is similar to that for galvanized iron but with one commercial size larger. Accessories, e.g. damper splitter etc. shall be of stainless steel.
- 4. Duct shall be braced as follows:

Larger Dimension of Duct (mm)Size of Brazing Angles (mm)DistanceBetween Bracing (mm)65 - 100 $25 \times 25 \times 3$ 1.20mAbove $38 \times 38 \times 3$ 0.60m0.60m

Angle bracing shall be carried around all four sides of duct.

5. kitchen exhaust duct shall be black iron steel US Gauge#16 with fully welded connection.

2.03 FLEXIBLE DUCTS

UL 181, Class 1. Use to connect between rigid ducts and outlets or terminals. There shall be no erosion, delamination, loose fibers, or odors from the ducts into the air stream. Minimum working pressure shall be 350mm water positive and 40mm negative for low velocity flexible ducts. Flexible ducts shall be maximum 2.40 meters in length. Minimum bend radius shall be twice of the duct diameter.

A. MATERIALS:

Interlocking spiral or helical corrugated type constructed of aluminum.

- B. INSULATION AND VAPOR BARRIER: ASTM C 553; 25mm nominal thickness and 32 kg/m3 density. The insulation shall be sheathed with vapor barrier having a maximum permeability of 0.02 perm per ASTM E96, Procedure C. THERMOBREAK or approved equal.
- C. JOINTS

Make airtight slip-joints sealed with pressure-sensitive vapor seal adhesive tape or duct sealer and secured with sheet metal screws. To prevent insulation compression, place 50mm wide by 25mm thick closed cell foam plastic spacers over the joints under vapor barriers. To provide a vapor tight joint, use a corrosion-resistant steel aluminum clamp over such spacers.

2.04 DUCTWORK INSULATION

Use in low pressure ducting particularly on branch ducts. It can operate at 996 Pascal (4") water column static pressure and velocities of 25.4 m/sec (5000 fpm).

A. MATERIALS:

Closed Cell Crosslinked Polyolefin Insulation, made of material such as Polyethelene based Crosslinked, factory applied reinforced aluminum foil and acrylic adhesive backing, 25 kg/cu.m density, maximum 0.32 w/mK at 20°C, non-hydroscopic, water vapor permeability better than 0.8gm/02/24 hours (90% RG, 38°C), -80 to 100 °C service temperature. Class 1 or better fire ratings.

- B. VAPOR BARRIER: The exterior surface shall be fire resistant foil scrim kraft facing. The interior shall be coated with thermosetting acrylic polymer.
- C. JOINTS: Joints are pre-molded double density slip-joint edges.
- 2.05 ACOUSTICAL DUCT LINING

Flexible or rigid mineral fiber lining. Lining shall not be less than 25mm and where applicable shall be of sufficient thickness to be thermally equivalent to the thickness of insulation of ductwork. Duct sizes indicated shall be increased to compensate for the thickness of lining.

- 2.06 CASINGS AND PLENUMS:
- A. FIELD-FABRICATED COMPONENTS:

Unless otherwise indicated, metal thickness, reinforcements, joint sealing, and fabrication and erection of equipment casings and plenums shall conform to ASHRAE STANDARD.

B. FACTORY-FABRICATED COMPONENTS:

Factory-fabricated and insulated sheet metal may be used if conforming to paragraph "Field-Fabricated Components." The panels shall be of modular design pretested for structural strength, thermal control, condensation control, and acoustical control. The panel joints shall be sealed and access doors shall be gasketed to prevent air leakage. Insulate access doors. Fasteners shall be corrosion resistant.

2.07 DRIP PANS:

Each cooling coil section in both field and factory assembled casings shall be provided with a stainless or galvanized steel drip pan not less than 18-gauge with drain connections. Drip pan shall collect, confine, and disposed of all condensate from cooling coils and attachments, including headers, return bends, distributors, and un-insulated pipe and fittings. Where individual eliminator blades are in section (not in one piece from top to bottom of coil bank), provide auxiliary drip through bottom of each section with drains to drip pans. Insulate drip pans with water impervious insulation of sufficient thickness to prevent condensation formation on the exterior at ambient condition to be encountered.

2.08 DIFFUSERS, REGISTERS, AND GRILLES

A. MATERIAL AND FINISHES:

Construct diffusers, registers and grilles of steel unless otherwise specified. Exterior and exposed edges shall be rolled, or otherwise stiffened and rounded.

Steel part shall factory zinc-phosphate treated prior to priming and painting or have a baked-on enamel finish. Linear diffuser shall be colored anodized aluminum and outdoor air fitting shall be stainless steel. Colors shall be selected or approved by the architect.

2.09 DAMPERS AND DIFFUSERS

A. CEILING DIFFUSERS

Equip with baffles or other devices required to provide air distribution pattern. Provide factory fabricated, single key, volume dampers. Except linear air diffusers, interna; parts shall be removable through the diffuser neck for access to the duct and without the use of special tools.

B. CIRCULAR, SQUARE AND RECTAGULAR DIFFUSER:

Each ceiling diffuser shall consist of four or more concentric circular elements designed to deliver air radially in a generally horizontal direction without excess smudging of the ceiling. The interior elements of the square and rectangular ceiling diffusers may be circular, square or rectangular as manufacturer's standard.

C. PERFORATED PLATE DIFFUSER:

Provide adjustable one-way, two-way, three-way or four-way air patter controls as indicated. Mount perforated diffuser plates flush with finished ceiling. Diffuser face-plates shall not sag or deflect when operating under design conditions.

D. LINEAR AIR DFFUSERS:

Joints between diffuser sections shall appear as hairline cracks. Provide alignment slots for insertion of key strips or other concealed means to align exposed butt edges of diffusers. Equip with plaster frames when mounted in plaster ceiling. Do not use screws and bolts in exposed face of frames or flanges. Metal-fill and ground smooth corner-joints of steel frame and flanges exposed below ceiling. Furnish separate pivoted or hinged adjustable air volume-damper and separate deflection blades. Volume and deflection blades shall be structurally rigid.

E. REGISTERS:

Supply register shall be double-deflection type. Provide volume dampers furnished by the manufacturer. Volume damper shall be of the group operated, opposed blade type and key adjustable by inserting key through face of register. Operating mechanism shall not project through any part of the register face.

F. GRILLES:

Construct and finish as specified above for registers, except that volume dampers shall be omitted.

2.10 DUCT SLEEVES AND PREPARED OPENINGS

A. DUCT SLEEVES AND CLOSURE COLLARS:

Fabricate from 20 gage galvanized steel. Where sleeves are installed in bearing walls or partitions use black steel pipe, standard weight, instead.

B. PREPARED OPENINGS:

Provide 25mm clearance between the ducts and the sleeve.

C. ACCESS DOORS

Door frame shall be welded in place airtight or bolted with air tight foam rubber gasket. Door shall be rigid and airtight with foam rubber gaskets and two or more galvanized steel hinges and tension fasteners. Provide doors as large as practical. Mount doors, if possible, so that air pressure holds them closed.

2.11 DAMPERS AND LOUVERS:

Shall be 2-gauge heavier than ducts in which installed. Dampers shall be opposed-blade type. The construction shall be aluminum or galvanized steel with interlocking edges and maximum 10 inch blade width. Conform to ASHRAE STANDRDS.

A. BACKDRAFT DAMPER (GRAVITY DAMPERS OR SHUTTERS):

Factory fabricated, with delicately balanced blades that open automatically when the fan starts and closed by gravity when the fan stops. Provide the edges of blades with felt or rubber strips to prevent rattling.

B. MANUAL VOLUME DAMPERS:

Balancing, factory-fabricated type. Equip dampers with accessible mechanism such as quadrant operators or 5mm rods brought through the side of ducts with locking set screw and airtight bushings. All air fittings shall be chrome plated with all volume control dampers in both supply and exhaust systems. Quadrants operators and rods will be marked to indicated damper position.

C. LOUVERS:

Fixed type. Fold or bead the edges of the louver blades to exclude driving rain. Louver frame shall be made of 16 gauge aluminum. Provide insect screen constructed of the same type metal as the louvers. Louver depth shall be as indicated.

1. Bird Screens:

With 12mm by 12mm mesh, 1.6mm diameter aluminum wire or 0.33 diameter stainless steel wire. Insect screen frames shall be grooved type with vinyl or neoprene spline insert for securing screen cloth.

2. External Louvers:

Weather proof external louver shall be supplied and installed by the Mechanical Contractor unless otherwise specified.

End of Mechanical Works Specifications

FIRE PROTECTION WORKS TECHNICAL SPECIFICATION

1.01 GENERAL DESCRIPTION:

- A. The General Conditions form part of these specifications and contract.
- B. The term "Contractor" in this specification means "Sub-contractor" unless otherwise specified

FPS 200 : SCOPE OF WORKS

- A. Furnishing of all materials, labor, tools, equipment and accessories for the complete installation, testing and adjustment, ready for use of the proposed automatic fire sprinkler system.
- B. The works essentially shall be, but shall not be necessarily limited to the following ites:
 - 1. Install complete with the automatic sprinkler system (AFSS) consisting of new supply fire lines, branch lines, fittings, valves, hangers, trims and its accessories required to complete the system.
 - 2. Install complete with the portable extinguishing system consisting of mounting support, bracket, trims and its accessories required to complete the system.
 - 3. All openings through which fire may spread from one floor to the other, such as holes through floors made for the passage of plumbing pipes and electrical circuits shall be sealed with fire resistant / or fire stopping materials.
 - 4. Furnishing and installing of instruction and identifications boards, charts, signs and markers, to include operating method and instructions.
 - 5. Priming and finish painting (red) of cladded and exposed piping and other part of sprinkler system except for sprinkler heads.
 - 6. Compete testing and commissioning, start-up of the floor Automatic Fire Sprinkler System in accordance with NFPA-13, to include cleaning, draining, adjusting and inspecting.
 - 7. Miscellaneous items and other related materials required for the satisfactory completion of the sprinkler system to include metal works, hangers, supports, anchors, bolts, bracing and accessories.
 - 8. Securing and payment of permits, licenses and bonds for the construction purposes, including approval from the Fire Department having jurisdictions.

- 9. Contingency to include the furnishing of written one (1) year warranty upon completion works of sprinkler system.
- 10. Preparation and submission of As-Built drawings in reproducible sheets including two (2) white prints copies at no cost to the Owner(s).
- 11. Securing and payments of all Contractor's taxes, VAT, etc.

FPS 300 : WORK NOT INCLUDED

- A. The following items of work will be supplied and done by others.
- 1. All cutting and patching shall be made by the General Contractor, except as a specifically noted and modified herein.
- 2. All electric power wirings, except that are furnished as integral part of factory assembles equipment, except as otherwise specified herein shall be by Electrical Contractor.
- 3. Supply and installation of fire doors shall be by General Contractor.
- 4. Fire alarm and fire station for the alarm system shall be by Electrical Contractor.

FPS 400 : APPLICABLE SPECIFICATIONS CODES, ORDINANCES, PERMITS AND FEES

- A. The work covered in this contract is to be installed according to the specifications, codes, ordinances and requirements of the following:
- 1. Fire Code of the Philippines
- 2. National Building Code of the Philippines
- 3. Fire Department Ordinances of concerned municipality
- 4. NFPA Codes of Reference:
 - NFPA 10 latest edition
 - NFPA 13 latest edition
 - NFPA 14 latest edition
 - NFPA 20 latest edition
 - NFPA 01 latest edition
 - NFPA 75 latest edition
 - NFPA 101 latest edition
- B. Cost of testing of materials, whether on originally specified items or on substitution, shall be to the account of the Contractor.

C. Results of tests shall be submitted to the Architect /or Engineer for evaluation at least fifteen (15) days before the material is due for installation on the jobsite.

FPS 500 : SHOP DRAWINGS, SAMPLE AND OTHER SUBMITTALS

- A. The Contractor's shall prepare and submit for approval the follwong:
- 1. Manufacturer's catalog, sheets, marked as necessary to indicate materials or equipment being furnished for the following items:
 - a. Sprinkler heads, sprinkler wrench and spare cabinets
 - b. Valves, flow control, test and drain assembly.
- 2. List of miscellaneous materials, including pipe, fittings, valves, etc.
- 3. Field test reports
- 4. Such other similar information the Engineer may require.

FPS 600 : SUBSTITUTION AND TESTING OF MATERIALS

- A. Materials intended to be substituted for these originally specified shall be acceptable only after a formal request for substitution, accompanied by:
 - 1. Reason for substitutions.
 - 2. Certificate of test indicating quality, compared to those originally specified.
 - 3. Cost comparison with material originally specified. Request shall be submitted to the Architect/or Engineer subject for evaluation at least fifteen (15) working days before installation of subject material.
- B. Cost of testing materials, whether on originally specified items or on substitutions, shall be to the account of the Contractor.
- C. Results of test shall be submitted to the Architect /or Engineer for evaluation at least fifteen (15) days before the material os due for installation on the Jobsite.

FPS 700 : NOTES ON DRAWINGS

- A. The Drawings show the general arrangement of all piping. However, where local and/or actual conditions at the Jobsite necessitate a deviation or rearrangement, the Contractor's shall prepare and submit the new arrangement/shop drawings for the Architect's and/or Engineers final approval.
- B. Small scale drawings do not possibly indicate all offset, fittings and other parts of the system required. The Contractor shall arrange such work accordingly, furnishing such valves, hangers, support, fittings, trims and its accessories as may be required to complete the system in accordance to NFPA-13 Standard Installation of Sprinkler System.

FPS 800 : WORKMANSHIP AND COORDINATION OF WORKS WITH OTHERS

- A. The Contractor shall be held fully responsible for the work of any manufacturer or subcontractor supplying materials to or performing work for; as it is intended that the entire Fire Protection System shall be ready in every respect for satisfactory and efficient operation when finally delivered to the Owners.
- B. The contractor shall assume full responsibility and shall provide the services of a qualified Engineer to supervise the complete installation of equipment and to conduct the final acceptance tests.
- C. The work throughout shall be executed in the most thorough and satisfactory manner in accordance with the best practices of the trade.

FPS 900 : SPRINKLER HEADS

A. Type:

Automatic Quick Response. Standard 15mm dia. orifice, bulb type, upright, pendent or sidewall heads. Pendent heads (recessed type) shall be provided with aluminum escutcheon or approved equivalent to fit into ceiling boards or ceiling runners. Flush or concealed type pendent unit shall be accepted as substitute. Heads shall be UL Inc. approved, of one brand all throughout similar to "TYCO", "VICTAULIC', "RELIABLE' brand or approved equal and/or shall be standard product of a reputable manufacturer.

B. Head and Rating and Type:

Common Area Standard quick response, pendent, semi-recessed type sprinkler heads rating @ 135 °F to 165 °F (for use in maximum ceiling temp. of 100°F) Chrome finish

- C. Pipe Thread and Valve Seat
 - 15mm diameter nominal (Conventional)
 - 20mm diameter nominal (extended)
- D. Spare Sprinkler Heads:

Furnished spare heads as required in the code and maintenance service part list for a period of at least one (1) year reckoned from the date after termination of warranty.

- 1. Semi Recessed Pendent Type 6 pcs.
- 2. Sprinkler Tong 3 pcs.
- 3. Sprinkler Wrence 3 pcs

FPS 1000 : PORTABLE FIRE EXTINGUISHER

- A. Furnish and install as indicated on the drawings. Unit shall be approved by the Fire Department having jurisdiction and UL listed. Similar to "Fimco" brand or approved equal and to match requirements of Bureau of Fire Protection. Mounting shall be inside the fire hose cabinets and/or as shown on drawings.
- B. Types and Locations
 - 1. 10 lbs. PFE, Dry Clean Dining area, kitchen area
- C. Types and quantity of portable fire extinguisher shall be as per final approval and recommendations of Local Fire Department having jurisdiction.

FPS 1100 : PIPINGS - GENERAL

- A. Where American Standards are specified, other approved national or local standards may be acceptable, provided copies of these standard Specifications are forwarded to the Engineer for his approval.
- B. Black iron, schedule 40 pipes, ASTM A-120 for feed mains, cross mains, branch lines. Similar to "Supreme", "Superior" or approved equal.
- C. All side piping shall be installed by means of screwed or flanged fittings. Flanged joint shall be used at all sprinkler risers and provided with 1.6 mm thick long fiber asbestos, cross laminated gasket "cranite".
- D. Torch cutting shall not be permitted as means of modifying or repairing sprinkler system.
- E. All welding shall be "shop welding" only and shall be done by electric arc welding process.
- F. Teflon type shall be used for screwed joints.

FPS 1200 : FITTINGS - GENERAL

- A. Sprinkler system fitting shall be extra heavy pattern. Whenever a change in pipe size is made, one piece of reducing fitting shall be used. Provide mechanical grooved coupling at riser pipes of every floor.
- B. All fittings shall be of malleable iron fittings.
- C. Steel pipe flanges mating with steel equipment flanges shall have the same facing as the mating flange.
- D. Screwed union shall not be used on pipes larger than 50 mm (2"). Coupling and unions of pipes other than screwed type shall be of types approved specifically for sprinkler used.

FPS 1300 : SWAY BRACES, HANGERS, SUPPORTS AND SEISMIC BRACINGS

A. Sway bracing: Steel flat bars, structural grade 7 mm minimum thickness, with corrosion protection; shape /or type as shown on plans.

- 1. Sway bracings Installation:
 - 1.1 Adequate sway bracing shall be provided to oppose longitudinal or transverse pipe movement.
 - 1.2 Lateral bracings shall withstand a force equal to 50% of the weight of the water contained in piping, valves and fittings. Spacing shall be 40 ft. (12m) maximum distances along main lines.
 - 1.3 Longitudinal bracing shall withstand a force equal to 50% of the weight of crossmain and feedmain within the zone of water contained in piping, valves and fittings. Spacing shall be 80ft. (24m) maximum distances along mian lines.
 - 1.4 Piping anchorages shall not be scured on two 92) dissimilar parts of the building which will move differently.
- B. Pipe Hangers: Steel flat bars, structural grade, 7 mm minimum thickness, with corrosion protection as shown on plans.
 - 1. Hangers Installation
 - 1.1 Approved inserts may be used for the support of hangers, anchorages in concrete. Expansion shield should be used in a horizontal position on the sided of concrete beams and shall be above the bottom reinforcements.
 - 1.2 Increase coupling shall be attached immediately adjacent to the expansion shields.
 - 1.3 When pipes 100 mm diameter and larger are supported in the vertical position, the support shall be at a minimum spacing of 3.0 meters (10') on center. Holes in concrete for expansion shield shall be made of the proper size and depth, as specified fort the type of shield used, to provide a uniform contact with the shield over its entire length and circumference.
 - 1.4 Maximum distance between hangers shall be 3.65 meters (12') for size 25mm (1"). Provide at least one hanger for each length of branch line, one between each two cross main branches, one hanger for each 4.75 meters (15') length of feed mains. The distance between the hanger and the center line of the upright sprinkler shall not be less that 76 mm (3").

FPS 1400 : PIPE SLEEVES

A. MATERIALS:

- 1. Through fittings cast iron
- 2. Below Grade cast iron or standard weight iron pipe.
- 3. Above Grade steel pipe

B. INSTALLATION:

- Minimum clearance between the pipe and sleeves shall not be less than 25 mm (1") for pipes, 25 mm (1") to 89 mm (3-1/2) and 50mm (2") clearance between pipes 100 mm (4") and larger. The clearance between pipes and sleeves shall be filled with non- combustible flexible materials such as asbestos rope and furnished with semi-hardening mastic flush.
- 2. Floor sleeves shall be extended at least 76 mm (3") above the top of the wearing surface.
- 3. Drains, fire department connections, test manifolds and other auxiliary piping connected to risers shall not be cemented into wall or floors.

FPS 1500 : FIRESTOPPING MATERIALS

A. MATERIALS:

- 1. Firestop compounds and damning materials shall be UL listed and shall conform to the requirements of qualified designers or Manufacturers approved modifications, as supported by engineering reports. Similar to "Hilti", "Metacaulk" brand or approved equal.
- The penetrations seal material must be unaffected by moisture and must maintain the integrity of the wall or the floor assembly for its rated time period when tested in accordance with ASTM E814 (UL 1479). The system shall be UL listed classified for up to and including three (3) hours.
- 3. Fire stopping materials shall be asbestos and lead free and shall not incorporate oil not require the use of hazardous solvents.
- 4. All fire stopping materials shall be manufactured by one manufacturer throughout the completion of the project.

- 5. Do not proceed with installation of fire stop materials when temperatures exceeded the manufacturer recommendation limitations for installations.
- B. PREPARATIONS:
- 1. Clean substrate of dirt, dust, grease, oil, loose materials, rust or other matter that may affect proper fittings or adhesion of the fire stopping materials.
- 2. Clean metal and glass surfaces with a non-alcohol solvent.
- C. INSTALLATIONS:
- 1. Installation of firestops shall be performed by an applicator / installer qualified and trained by the manufacturer. Installation shall be performed in strict accordance with manufacturer's detail installation procedures.
- 2. Apply firestops in accordance with fire test reports, fire resistance requirements, acceptable sample installation amd Manufacturer's recommendations.
- 3. Unless specified and approved all insulation used in conjunction with through penetrations shall remain intact and undamaged and may not be removed.
- 4. Seal holes and penetrations to ensure an effective smoke seal.
- 5. In areas of high traffic, protect fire stopping materials from damaged. If the opening is large, install firestopping materials capable of supporting the weight of a human load.
- 6. Insulation types specified in other sections shall not be installed in lieu of firestopping materials specified herein.
- 7. All combustible penetrants (e.g. non-metallic or insulated metallic pipes) shall have firestopping using products and system tested in a configuration representative of the field condition.
- 8. When required to properly contain firestopping materials within opening, damming or packing materials may utilized. Combustible damning material must be move after appropriate curing. Non-combustible damming materials may be left as a permanent components of the firestops system.
- D. CLEANING:
- 1. Remove spilled and excess materials adjacent to firestopping without damaging adjacent surfaces.

2. Leave finished work in neat, clean condition without an evidence of spillover or damage to adjacent surfaces.

FPS 1600 : PIPE PAINTING

- 1. Sprinkler heads, valve and stems and the likes shall not be painted.
- 2. After installation and test before the installation of ceiling fixtures or boards, all piping shall be prime painted and coated with two coats of gloss red quick drying enamel.
- 3. Paint to be used shall be of low VOC type as specified by the Architect/Engineer.

FPS 1700 : MAKERS, INSTRUCTION AND IDENTIFICATION SIGNBOARD

These signboards shall be made of gauge No. 14 black iron sheet with baked enamel finish and letter instruction as shown on the plans Additional signboards shall be mounted on the unobstructed area for easy identification reading. Paints shall be basically gloss fire red and white.

FPS 1800 : ACCEPTANCE TESTS

- 1. The Contractor shall conduct tests in the presence of inspector or authority having jurisdiction (The Philippine Fire Protection Association of Fire Protection Associates).
- 2. Isolated leak tests or partial tests of areas may be performed prior to installation of ceiling materials in the area to preclude any damage and during the total system final tests.
- 3. To remove foreign materials which may have entered the piping during installation of same flushing or underground connection us required before sprinkler piping is connected.
- 4. Hydrostatic Tests:
 - 4.1 Minimum tests pressure shall not be less than 200 PSIG on the system pressure. Exceeding system pressure requirements to the minimum test pressure shall be tested applying additional test pressure of 50 PSIG on the system for at least twenty four (24) hours minimum.
 - 4.2 No visible leakage for inside sprinkler piping will be allowed. For underground main and laid-ins, exceeding the permissible leakage or joints, necessary repair shall be made.

- 4.3 All control valve water pressure to ensure proper operating tests. Use clean noncorrosive water.
- 4.4 Fire connection shall be tested (part of base building works).
- 5. The Contractor shall furnish the Owner a written statement to the effect that the work covered by the Contract has completed and tested, before requesting for final approval of the installation from the Fire Department Authority.
- 6. Testing of drainage facilities shall be made by opening the main drain valve while the control valve is wide open.
- 7. Test certificate shall be filled out and signed by the Owner's and Contractor's representative.
- 8. System operations and maintenance chart shall be submitted to the Owners upon completion of the Contract. This shall include, among others, the locations of the control valves and care of the new equipment.

FPS 1900 : MINOR MODIFICATIONS AND TIME COMPLETION

- The plans as drawn should show conditions as accurately as it is possible to indicate them in the scale. The plans are diagrammatically and do not necessarily show all fittings, etc. necessary to fit the building conditions. The locations of valves, fittings and the fixture shown on the plans are approximately. The Contractor shall be responsible for the proper location in order to make them in compliance with Architectural details and instructions.
- 2. The Contractor shall complete the work herein describe in accordance with the specific schedules set by the Owners in accordance with General Contractor's Schedule of Work.

FPS 1900 : CONTRACTOR'S RESPONSIBILITY

- 1. The Contractor shall provide temporary fire protection system during the construction period. This shall be of sufficient capacity to put any fire protection system during the construction period. This shall be of sufficient capacity to put any fire that may break out due to construction operations. This is in addition to temporary fire extinguisher required.
- 2. The Contractor shall identify and save the Owner, the Architect and the Consulting Engineer harmless from against all liabilities for damage to property occasioned by any or omission of this Contractor's on any of this Sub-Contractor's including any and all expenses, legal or

otherwise which may be insured by the Owner, the Architect or the Consulting Engineer, in the defense of any claims, action or suits.

- 3. The General Contractor shall be responsible for the coordination among the different trades on the Jobsite in order to finish the Works in the least possible time, in strict compliance and in accordance with the Plans and Specifications.
- 4. Throughout the construction period open ends of all installed fire lines, crossmain, branch lines, rise nipples, drop nipples and other related pipings shall be kept closed by temporary plugs.
- 5. All installed fire lines risers, dry stand pipes, FCV and ITC drain line stack and other related piping shall not be used to conduct dirty construction wash water especially those with cement mixes to avoid possible clogging.
- 6. Temporary potable water supply shall be made available to construction workers as construction progresses.
- 7. A temporary human excreta disposal system shall be provided by the Contractor to serve the Workers during the construction period.

End of Fire Protection Works Specifications
LEGASPI TOWERS 300 CORPORATION, INC.

RENOVATION/REPAIR GUIDELINES

- 1 Any owner who wishes to renovate/repair his unit must comply with the Philippine Condominium Act. the Master Deed of the Legaspi Towers 300 Corporation, Inc., its House Rules, and relevant government laws and ordinances.
- 2. Fifteen (15) days prior to the commencement of any construction, the owner must provide the Corporation the contract of work, if any, and the working drawings, plans, and materials specifications to be used. The renovation should not deface or impugn the architectural design of the building. If requested, a letter certification, signed by a certified architect or structural engineer that the renovation will not affect the structural integrity of the building should be provided.
- 3. Renovation must be carried out within a reasonable period of time. If the owner fails to complete the renovation within the time permitted, the Corporation shall charge the amount of Five Hundred Pesos (P500.00) per day of delay. If the contractor abandons the renovation, the Corporation has the right to cancel the permit and require a new application to be submitted.
- 4 Any renovation work performed without securing a permit shall be immediately stopped and worker(s) escorted out of the building. The unit owner shall be fined One Thousand Pesos (P1,000) and be required to apply for a permit.
- 5. Units with outstanding accounts will not be allowed to proceed with any renovation until such accounts have been settled with the Administration.
- 6. Approval of the renovation plans shall not subject the Board of LT 300 Corporation, or any of its individual members, to liability for any loss or damages for:
 - a Defects in the structural integrity or soundness of the approved renovation;
 - b. Failure to comply with building codes and other governmental requirements;
 - c. Any condition or defect in plans, revised or approved, under these rules, or arising out of the action, inaction, or quality of work of any contractor, subcontractor, employee or agent; and
 - Any injury, damage or loss arising out of the manner or quality or other circumstances of an approved renovation/repair.
- 7. The unit owner/applicant, by signing the Renovation Request and Agreement Form, agrees in writing to indemnify and hold harmless LT300 Corporation, its officers, directors, consultants, employees and representatives from any personal injury, liability or damage to any personal property or to any part of the building, its utilities, equipment or furnishings which may arise out of the work being done.
- 8. The approval for the renovation/repair work does not relieve the unit owner of the requirement to obtain any permits and/or licenses as required by law.
- 9. A cash bond shall be assessed by the Corporation for each application. Twenty percent (20%) of this amount covers for the use of the facilities and utilities, and administrative costs, and is

Renovation/Repair Guidelines approved by the Board of Directors on _

non-refundable. Eighty percent (80%) of this amount covers damages caused by the work, and is refundable if no damage is observed.

The cash bond shall be assessed based on the number of working days or value of renovation work, whichever is higher, as follows:

No. of Working Days	Value of Renovation Work	Cash Bond
3 to 6	Up to P100,000	P5,000
7 to 12	P100,001 - P250,000	10,000
13 to 24	P250,001 - P500,000	25,000
25 to 36	P500,001 to P1,000,000	50,000
37 to 48	P1,000,001 - P2,000,000	100,000
49 to 60	More than P2,000,000	250,000

Work that will last more than sixty (60) days shall be assessed by the Board of Directors separately

In case the cash bond is not sufficient to cover for the damages, the unit owner shall pay the balance in full prior to continuation of work or move-in.

- 10 General repairs or maintenance work of up to two (2) days shall not be assessed a cash bond, but a work permit must still be obtained by filing an Application for Minor Repair. Unit owners who try to pass on renovation work as general repair or maintenance to avoid putting up a cash bond shall be penalized with a fine of Five Thousand Pesos (P5,000) per infraction. This fine must be settled within one week from notice or no further work permit shall be issued to the unit.
- 11. Works considered as general repairs or maintenance are:
 - a. Window treatments such as blinds, draperies, shutters;
 - b. Repair of window frames, replacement of glass or screens;
 - c. Airconditioner cleaning or repair;
 - d. Minor repainting or touch up of wall or ceilings;
 - e. Replacement of less than ten (10) square feet of floor tiles or the like; and
 - f. Other works or repairs which the Maintenance Head considers as such
- 12. Unit owners shall require their contractors and workers to strictly observe LT300 House Rules and Regulations and the Renovation Guidelines. Unit owners shall be responsible for the discipline and proper decorum of their workers at all times while inside the building premises.
- 13. Prior to issuing a Notice to Proceed for any renovation work, the contractor together with the unit owner or his authorized representative must meet with the Maintenance Head to review building work rules and to discuss the job to be performed, any anticipated problems, and answer any questions that may arise.
- 14 Work shall be conducted in the following manner:

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a The names, addresses, phone/cellphone numbers of all workers and other people involved in the renovation are to be provided by the owner to the Maintenance Head before work can be started. This list must be updated regularly.

All workers must have a valid government-issued ID to be allowed entry to the building. Workers MUST wear badges/passes issued by the LT300 building security AT ALL TIMES while in the building. They should also wear their uniforms or white t-shirts, pants and shoes when in the common areas. Sandos, shorts and slippers will not be allowed.

Workers shall use only the service elevator when going to or out of the unit. Stairways and fire exit stairs shall not be used by the workers, unless prior permission is obtained.

Workers found violating this rule shall be fined of One Hundred Pesos (P100) for the first offense and banned from the building on the second offense.

b. All work shall be conducted within the individual unit premises from 8:00 A.M. to 5:00 P.M., Mondays to Fridays. Work may be done on Saturdays, subject to the provision in 14c below. No work is allowed on Sundays and holidays. Worker(s) violating this rule shall be escorted out of the building and a fine of One Thousand Pesos (P1,000). A second violation shall result in the cancellation of work permit.

For units located in the commercial areas, the Maintenance Head is authorized to grant exemptions for different working hours.

- c Noisy jobs such as concrete chipping, drilling and hammering are not allowed on Saturdays and during overtime. Violation of this rule shall result in a find of Five Hundred Pesos (P500) on the first incident/offense and One Thousand Pesos (P1,000) on the second incident/offense. On the third incident/offense, the worker(s) will be escorted out of the building and the work permit will be cancelled.
- d. No overtime work shall be allowed without prior written approval of the Maintenance Head. Request for overtime must be made at least twenty-four (24) hours before execution. Violation shall result in worker(s) being escorted out of the building on first offense, and cancellation of the work permit on second offense.
- e No worker will be allowed to stay overnight in the building except in an emergency or with written permission of the Administration. Violators shall be escorted out of the building and a fine of One Thousand Pesos (P1,000) per day per person shall be imposed for the first offense. Permit shall be cancelled on the second offense.
- f Cooking and making fire inside the unit is strictly prohibited. Workers violating this rule shall be escorted out of the building and banned from reentry.
- g. Strictly a NO SMOKING policy shall be observed within the unit and the building. Violators shall be fined One Hundred Pesos (P100) on first offense and shall be banned from the building on second offense.
- h. Gambling or drinking of liquor/beer is strictly prohibited. Further, no improper conduct or indecent behavior shall be tolerated, Violators shall be escorted out of the building and the unit owner shall be fined One Thousand Pesos (P1,000.00) per offense.

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- 15. Owners/Contractors must provide one (1) unit of a 10-lb. fire extinguisher for every seventy (70) square meters area inside the unit once work is started until it is finished. Workers must be trained to use the fire extinguishers. Violation of this rule shall result in suspension of work permit until compliance is secured. A fine of One Thousand Pesos (P1,000) shall also be charged.
- 16 Deliveries of construction materials must be coordinated with the Maintenance Head, and can be made from Mondays to Sundays, from 8:00 a.m. to 5:00 p.m.

All delivenes must be brought directly to the unit under construction/renovation. The basement nor any portion of the common areas may not be used as a staging or a temporary storage.

17 Materials, equipment and work debris can only be transported in the service elevators. However, heavy or voluminous items should not be transported using the elevator without prior approval of the Maintenance Head.

Contractors must provide a platform truck with rubber tires for use in transporting the materials to/from the elevator from/to the unit. In order to prevent damage to the elevator and corridor flooring, contractors must cover these with heavy cardboards or plywood protection.

Violation of this rule shall result in a penalty of One Thousand Pesos (P1,000) on first offense and cancellation of the permit on second offense. Furthermore, any damage to the common areas caused by the improper transport of materials and debris shall be charged against the cash bond

- 19. Debris and rubbish must be cleared out of the building by the owner/contractor at their own expense. Dumping of debris in the garbage rooms or vacant spaces of the building such as corridors, fire exits and basement parking areas is not allowed. Violation shall result in a fine or Two Thousand Pesos (P2,000) plus the cost of removal of debris. A second violation shall result in the cancellation of work permit and forfeiture of the remaining cash bond.
- 19 Use of electrical outlets in the common areas is subject to the approval of the Maintenance Head. A minimum charge of Five Hundred Pesos (P500) per day shall be imposed on such usage, if allowed, aside from other safety requirements which the Maintenance Head may impose Violation of this rule shall result in cancellation of permit.
- 20 All plumbing and sanitary piping lines and connections must be checked by the house plumber before closing or covering the floor and/or walls. A notice of at least two (2) days must be given to the Administrator for said inspection. Management will not connect water service if unit was not inspected
- 21. For bathroom and kitchen renovations, owner/contractor shall replace all branch water lines to the shower body, sink, toilet, and risers. Check valves must also be installed on the feed lines. Replacement toilets and faucets must be of the water-saving types. No jet flush/high pressure toilets are permitted. Installation of a grease trap is mandatory in kitchen sinks. No insinkerator or garborator may be installed. Management shall require the removal of unauthorized appliances/fixtures and/or installation of grease trap prior to water service connection.
- 22 Since our building is not equipped with a fire sprinkler system, the use of combustible or flammable materials in the renovation is highly discouraged.

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Wood or any combustible material shall not be allowed above the ceiling. If wood paneling or other combustible materials are proposed as wall cladding, these should be installed on a sub-wall made of non-combustible wall structure.

Interior partitions should be of non-combustible materials. Gypsum boards of fiber cement sheets are recommended for use. Masonry units may be used as partitions, however, these should be hollow, non-load bearing, and made of light weight aggregates such as perlite. Poured concrete walls that will create wet works are not allowed.

- 23. No asbestos, lead paint, or other polluting and/or hazardous materials shall be allowed to be used in the renovation/repair. Owner/contractor shall immediately remove and dispose of any pollutant or hazardous materials that may be discovered by Management. Failure to do so shall result in the cancellation of permit.
- 24. All electrical work must be done by a licensed electrician and comply with the requirements of the Philippine Electrical Code and the city regulation.
- 25. A notice of rule violation will be given to both the owner and contractor upon a violation. All parties are aware that multiple violations shall lead to both fine and work stoppage of the project. All fines imposed shall be deducted from the cash bond.

Suspended work can only proceed after the owner and contractor meet with the LT300 President or his designates, and Management is convinced that no further violation will occur.

- 26. Administration inspectors, maintenance personnel and security guards shall have full access to the unit and check on the compliance with approved plans, renovation rules, progress of work, and condition of the unit.
- 27. The LT 300 Board of Directors reserves the right to blacklist any contractor, subcontractor or workers who have a history of substantial or repeated work rule violations.
- 28. The LT 300 Board of Directors has full authority to adopt and amend these rules, provided such amendments shall be prospective only and shall not require modifications to previously approved renovation/repair that has commenced.

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Renovation/Repair Guidelines approved by the Board of Directors on _

LEGASPI TOWERS 300 CORPORATION, INC. 2600 Roxas Blvd. Cor. P. Ocampo St., Malate, Manila

RENOVATION REQUEST AND AGREEMENT FORM

Date

Unit No.:

To The Board of Director

Thru The Building Administrator

Gentlemen

Please be advised of my desire to repair-renovate my unit in accordance with and pursuant to the Master Deed and Renovation Guidelines. In support of my application, I am submitting the following documents:

- a) Scope of Works
- b) Contractor's name and contract of work
- c) Preliminary lay out plans, ceiling, electrical, etc.
- d) Perspective showing general design and finishes
- e) List of machineries, heavy tools and equipment
- f) Bar chart/project timetable

Should this application be approved, I agree to the following terms, conditions, rules and regulations:

- 1 The repair / renovations shall be carried out between the dates ______ to _____ and shall be in accordance with the Renovation Guidelines.
- 2. I will require my contractors / subcontractors to abide by all the House rules and regulations, instructions that may be given / issued by the Building Administrator.
- 3. I will dispose all rubbish and debris (through my contractor / sub-contractor) at my own expense and account.

4. I shall be solely responsible for and indemnify LT 300 Corporation for all damages caused now or in the future to common areas and other units affected by this proposed renovation, and consent to all resulting repairs being undertaken by LT 300 at my sole cost and expense

5 I verify that we have the required building permits and insurance to cover the work directly or through the contractor

Renovation Request and Agreement Form

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- 6. I understand that no refund for the cash bond could be claimed without presentation of clearance issued by the Administrator. Further, no Move in Permit will be issued without payment of all accounts or obligations to LT 300.
- I have read and hereby agree to abide by all the terms and conditions herein specified including those set forth in the Renovations Guidelines and the LT 300 House Rules and Regulations which form part of this agreement.

Signature of Unit Owner

Printed Name of Owner

Recommending approval

Maintenance Head

CASH BOND REQUIRED			
(To be filled up by Maintenance Head) *	(To be filled up by Accounting Office)		
Amount	OR Number		
	Date		

Approved by:

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Administrator

Noted by:

.;*

LT 300 President

Renovation Request and Agreement Form

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